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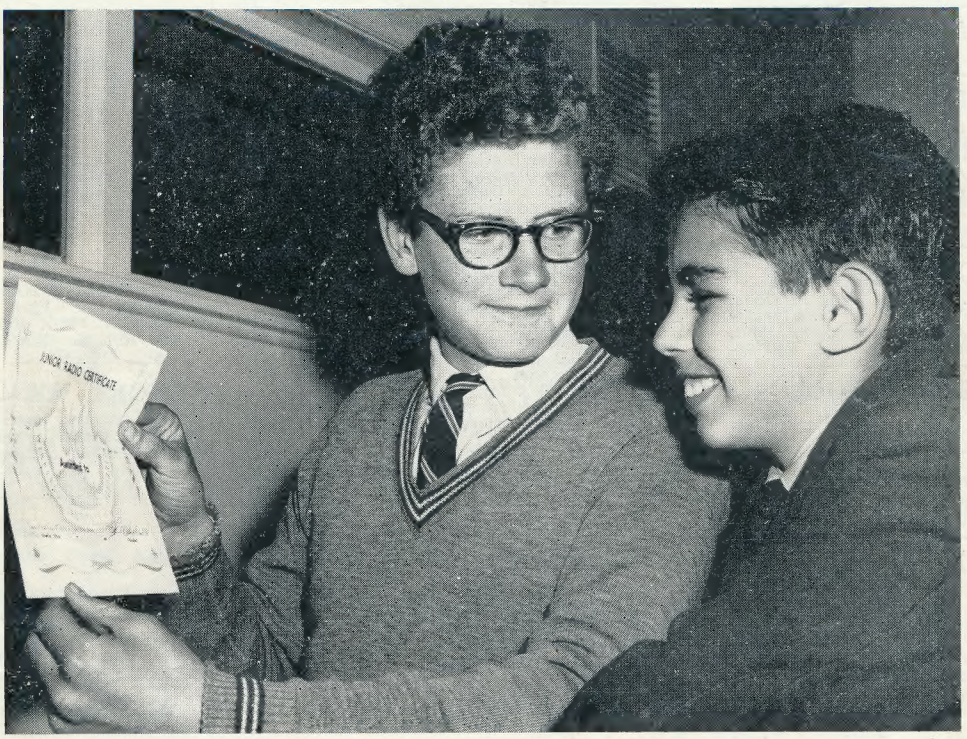

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OUR COVER

Recipients of Y.R.S. Junior Radio Certificates, Greg Smith and Theo Todorob, of Gowrie Park State School.

FEDERAL COMMENT

★

"GREETINGS"

Well, well, it's Christmas time again and by the end of the month of December another year of Amateur Radio will have become history.

Looking back, it perhaps has not been a dramatic year for Amateur Radio on a world-wide basis, but, nevertheless, in various parts of the globe the Amateur Service has played its part in providing communication where emergencies have existed, encouraging and training young people into the science of radio, co-operating with the world-wide Scout Organisation and generally employing itself in the field of investigation and research for which it is internationally known and respected.

Looking forward one can envisage a great challenge to the Amateur Service—not only in continuing its unique system for spreading goodwill amongst Nations, but also in preparing itself more rigidly to proclaim and activate itself in the National interests of its environment. If it does not awaken to do this, then its future may well be at stake at the hands of technological progress and political pressures for a shrinking frequency spectrum.

This challenge is very real and must fall more to the lot of the younger up-and-coming Amateur than the old-timer who played his part in another and perhaps more exciting decade. The young Amateur must meet the challenge of a different order and progress rapidly into the technical process of developing—along with the back room engineer and scientist—the modern modes of communication whereby more channels-per-kilocycle become possible, and at the same time apply his Amateur Radio in the National interest of his country rather than completely subjugate his activity to the level of "an interesting scientific toy".

That the future security of the Amateur Service is assured, would be foolish thinking. Although its progress will essentially be in the hands of the younger generation who technically will be starting off where others have left off, the older and currently experienced Amateur can—and must—vitally contribute his effort to create, re-create and maintain an image for the Amateur Service with which no Government will want to dispense. All over the world our future is in our own hands to do with what we will. If we make a mistake, we will only have ourselves to blame.

Members of the Federal Executive, the Federal Council and Councils and Officers of the Divisions of the Wireless Institute of Australia over the Commonwealth of Australia join me in wishing every Amateur wherever he may be located, on land or sea or in the air, hearty Christmas wishes and a prosperous New Year for 1966.

—G. M. HULL, VK3ZS, Federal President.

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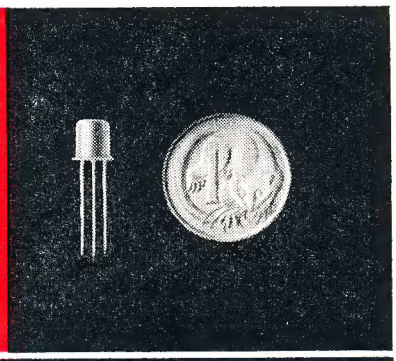

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Do's and Don'ts in Constructing Power Converters

GILBERT YANOW, VK4YG (K6TOS), Physics Dept., University of Qld.*

BUILDING the a.c. supply for my Drake TR3 posed no great problem as I had the necessary transformers in my "junk box". However, the mobile power supply was another story. Buying the commercial unit was out of the question—the purchase of the TR3 itself had strained the good relations with the XYL enough, as any married Ham can well appreciate! I tried to find the special transformer needed to build a unit on the local market, but this also proved unsuccessful. That left only one thing to do—I would have to build the converter from scratch.

There has been a good deal written on d.c.-d.c. converter circuits in trade and Amateur journals. There are two basic circuits that can be used; the difference being that with one, the collectors of the transistors are grounded, and with the other circuit, the collectors have a potential on them. I frankly prefer the former, since it permits one to directly bolt the transistors to the chassis, thereby eliminating the worry of shorting the transistor cases on some part of the car when installing the unit. The basic oscillator circuit is shown in Fig. 1.

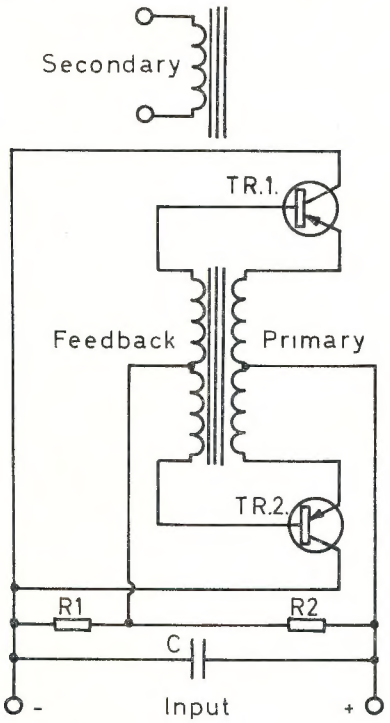

Fig.1.

The way it works is really quite simple. The resistor network composed of R1, R2 puts a small forward bias on the biases of the transistors to ensure that oscillation will start. The capacitor acts as a low Z source and filters any spikes on the d.c. input. When the battery is connected, current will flow through the transistors, and since the gain values of the two are not exactly the same, the current flow will be larger through one over the other. The changing current causes an e.m.f. to be produced in one-half of the primary, which in turn produces an e.m.f. in the corresponding half of the feedback winding. The effect is for still more forward bias to be put on the transistor, which causes still more current to flow, etc. This run-away continues until the core is finally saturated, and the current stops increasing, i.e. the production of the e.m.f. stops. At this point, the other transistor and half of the primary take over and start the process again. In such a manner an oscillation is produced. It is interesting to note that the circuit will actually work with just one transistor—it just operates at a different frequency.

The most critical item of design is the transformer. The core material should have what is known as a "square hysteresis loop". That is, when the proper amount of primary current is drawn, the core should saturate very quickly. This characteristic assures the production of a good square wave without a large voltage spike, but we will talk more about this in a moment. Now, let us direct our attention to the problems associated with designing the transformer.

DESIGNING TRANSFORMER

The "transformer formula" can be found in any radio handbook, and it determines for the builder the number of turns of wire to be put on the primary winding, i.e.

$$N_P = \frac{E \times 10^3}{26\ B\ A\ f}$$

where N_P = number of turns on the primary.
E = voltage across the primary.
B = saturation magnetic field in gauss.
A = cross-section area of the core in square inches.
and f = frequency of oscillation in cycles per second.

This formula was actually around long before we had transistor d.c.-d.c. power converters, for it is also used to calculate the number of primary turns on a regular a.c. power transformer. When this equation is now applied to the specialised converter transformer, care must be taken.

Without going into a lot of detail, let us examine the physical significance of the formula, and also the difference in operation between an a.c. and a converter transformer.

Under no load conditions, i.e. the secondary circuit left open, the primary itself presents an impedance ($X_L = \omega L$) to the input voltage. This impedance will cause a certain "idle" current to be drawn, and this current in turn produces a magnetic field inside the core material. It turns out the magnetude of the magnetic or "B" field remains constant regardless of the load conditions. The transformer equation determines the number of turns on the primary winding so that the "magnetising force" or more simply the N_PI product (where I is the current in the primary) under no load conditions will produce the maximum B field the core can sustain before saturation.

It should be pointed out that the N_P value, as calculated from the equation, is the theoretical minimum turn number to use; however, in practise it may be necessary to increase this number depending on the particular requirements of the transformer.

What happens if the N_P that is used is too small? If a value less than that given by the equation is taken, the primary current will be too large, causing excessive losses in the core. It is almost a sure bet that the transformer will overheat and probably buzz quite loudly. Even if the calculated N_P is employed, there may still be trouble. The current drawn in the secondary produces its own B field which in turn causes more current to flow in the primary. (Note: Because of phase relationships, the total flux in the core remains constant.) If too large a load is put on the secondary, it will cause too much current to flow in the primary with the same effect as before. As the core losses increase, the efficiency also falls drastically. This problem can be solved simply by increasing the number of turns on the primary winding. That is, if the value of N_P is increased, I must become smaller since N_PI equals a constant value—i.e. the number of ampere-turns to produce the saturating magnetic field.

So far, the discussion has only been in reference to the normal a.c. power supply. When turning to converter transformers, it is found that the exact same arguments hold, the only difference being in the end effects observed. Whenever N_P proves to be too small, the oscillatory circuit will not work properly—the effect is really quite dramatic. When the point of maximum load is reached, the operating frequency will start to "take off" and increases rapidly, while the voltage output falls "like a rock"! Again, if the wish is to be able to draw more power, the number of turns on the primary must be increased to lower the I.

The prime lesson that should have been driven home by now is to use as many turns on the primary as possible, or, in other words, the lowest frequency of operation. The limiting factor will be the "window" of the transformer; that is, the amount of area available for wire to be wound in.

One more point should be mentioned before actually going on to the design of the transformer. We can minimise the problem of core loss to some extent by properly choosing the thickness of the core lamination or tape the core

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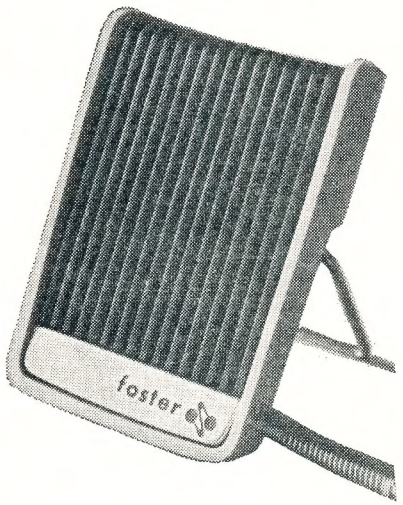

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SIZE: 3" x 2-1/8" x 1".
Cable: 12 ft. of P.V.C.
Switch: on-off.
Desk Stand. Clip folds for hand use.
Colour: WHITE.
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is made up of. It would seem, from a logical point of view, that if the individual layers in the stack are thin it might be possible to saturate them more evenly and quickly. As a rule of thumb, I would use Table 1 as the maximum frequency of operation for various lamination or tape thickness.

Thickness	Operating Frequency
0.004 inch	400 c.p.s.
0.002 inch	1000 c.p.s.
0.001 inch	2500 c.p.s.

Table 1.

Now with this background, let us go ahead. As an example, take a d.c.-d.c. power converter capable of ratings in Table 2.

HV	500v. d.c. at 225 mA.
LV	250v. d.c. at 175 mA.
Bias	—90v. d.c. at 10 mA.
Input	12v. d.c.

Table 2.

Voltage doubling circuits will be used for the output circuits. This means fewer turns on the secondary, fewer diodes, and smaller voltage ratings of the capacitors. Also because of the fact large value capacitors are used, there will be good dynamic regulation, a must for proper s.s.b. operation. Finally as design criteria, let the switching frequency be taken as 1000 c.p.s.

In addition to the windings shown, a feedback winding will be needed to operate the switching circuits. Operating the transistors in grounded collector requires quite a high driving voltage. A feedback factor of about 1.25 is adopted. This winding will not carry a large current, so a small size wire may be used.

The h.v. power is, under full continuous load, 112.5 watts, but this will only be drawn on transmit. Assume one talks about 50% of the time, so the average power would be about 55 watts. The l.v. will be assumed on for both transmit and receive, and therefore will require a continuous 45 watts. Assuming 90% efficiency, a typical value for this type of converter, 9 amps. average will be required from our 12v. d.c. source, with a peak current of 15 amps.

The next step is to determine the different sizes of wire needed to carry the various currents. The cross-sectioned area of a wire is rated in circular mils" (c.m.) or simply the diameter of the wire squared in units of thousands of an inch. The current capacity of the wire is given in circular mils per ampere of current, and this figure may vary anywhere from 500 to 1200 c.m./amp. A good safe figure is 1000 c.m./amp. Looking up the needed current requirements in a wire table, such as found in the "Amateur Radio Handbook," the information in Table 3 was found.

Winding	Needed Current	Wire Size (B. & S. No.)
HV	450 mA.	23
LV	350 mA.	25
Bias	10 mA.	27 (over-rated —see text)
Feedback	—	27
Primary	9 amp.	two 16 wires in parallel

Table 3.

Only one-half of the primary and feedback winding operate at any one time—i.e. each half of the windings has a duty cycle of 50%. The parallel No. 16 wires can carry 5 amps. of current continuously, at a rating of 1000 c.m./amp., thereby giving more than ample capacity for our converter. Additionally, these two windings—the primary and feedback—must be wound bifilar. That is, both halves of the winding are put on simultaneously. (In this case, making the primary would necessitate winding four parallel wires.) This process assures that both parts of the primary and feedback are equally coupled. No. 27 wire was chosen for the bias and feedback winding, on the basis that a wire much thinner than this would be hard to work with, although from a current capacity the wire is much larger than needed.

Let us now turn our attention to the selection of the core. Cores can be obtained in various forms; the normal "E-I" type, as found in a.c. transformers, "C" type, toroidal, etc., but regardless of the shape, the laminations or tape forming the core cannot be thicker than 0.002 inch, as shown in Table 1. From the standpoint of size, I chose a toroidal core, although it is perhaps the most difficult shape of transformer to wind.

In Australia, toroidal cores can be obtained from Telcon Metals Ltd., Sydney. The metal used in these cores is an alloy with the trade name here of "HCR". It is composed of 50% nickel and 50% iron, and it possesses the characteristic of a "square hysterisis loop". This term means that the hysteresis curve of the core is as illustrated in Fig. 2. It can be seen that when the value of the "magnetising force", H ($= N_P I$), is such to produce a B field with saturating value, the core will saturate very quickly. This ensures that our output will be a good square wave and the voltage spike at the leading edge of the wave will be small. Actually, these last two points are quite important. If the wave form is not a proper square, there may be excessive heat dissipated in the transistors, and if the voltage spike is too large, the voltage rating of the transistors will be exceeded and eventually they will be ruined.

Cores can be bought from a large selection of sizes. However, in my case the choice was simplified in that the largest core available from stock was size "7C", which has the following characteristics:—

Outside diameter .. .. 2.25 inch
Inside diameter .... 1.5 inch
Saturation B field .... 15,000 gauss
Geometric cross-section .. 0.188 sq. in.

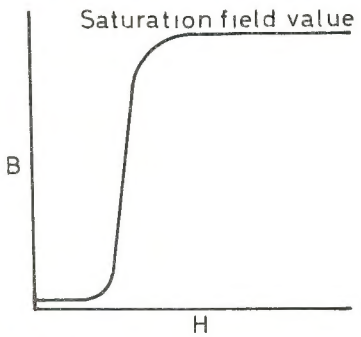


Fig.2.

Since the core is made of a spiral winding of tape, some of the geometric cross-section is just air space. Using the correction factor given by the manufacturer, an actually metal cross-section of 0.147 square inch was calculated.

The big question that had to be answered was whether the core was large enough for the transformer. This can be determined fairly easily, as illustrated by the following:—

From the transformer formula, assuming a one-volt drop in the transistors,

$$N_P = \frac{11 \times 10^8}{26 \times 15{,}000 \times 0.147 \times 1{,}000} = 19 \text{ turns.}$$

The primary will consist of two windings of parallel number 16 (B. & S.) wire, wound bifilarly. It was lucky that the N_P was not greater—as it turned out this was the maximum value that could be put on the core in one layer. The turns of the other windings are quickly found. Assuming about a 20% voltage drop in the h.v. at a continuous full load we get:—

$$N_{HV} = \frac{300}{11} \times 19 = 520 \text{ turns}$$

$$N_{LV} = \frac{125}{11} \times 19 = 215 \text{ turns}$$

$$N_{bias} = \frac{45}{11} \times 19 = 78 \text{ turns}$$

$$N_{FB} = 1.25 \times 19 = 24.$$

The total window area of the windings, in circular mils, is given by,

Primary	2 x 19 x 2,583	=	98,154 c.m.
F'dback	2 x 24 x 202	=	9,696 „
HV	520 x 510	=	265,200 „
LV	215 x 320	=	68,800 „
Bias	78 x 202	=	15,756 „
		Total	457,606 c.m.

It is safe to assume that at most only 40% of the winding space will actually be taken up by the wire, the rest being composed of insulating paper, air space, etc.

The window of the core, in circular mils, is 1,500 x 1,500 or 2,250,000 c.m. 40% of this is 900,000. It appears that the core will be big enough.

PRACTICAL SIDE

For the moment, let's shelf the theory and turn to the practical side of making the transformer. First, wind the primary evenly about the core, and insulate it with one layer of lunch wrap or similar type paper. Then wind on the feedback evenly over the core. Now stop! Breadboard up the basic circuit as shown in Fig. 1. Don't worry about the layout, as the placement of the wires is not critical. Put the power to the circuit and see if it works. If it will not oscillate exchange the end leads on the feedback winding —they have to be in phase with the primary. If it still does not work, check your bifilar windings. Realise

that if you incorrectly place the centre tap you will have two identical windings put on the core in opposite directions—i.e. you have done nothing more than make a non-inductive resistor!

The next operation is best carried out using an oscilloscope! In fact, I do not know a way to get around having to use one! Once the converter is working (it will make a soft buzz) look at the voltage pattern across the feedback winding. It should be a nice square wave, as illustrated in Fig. 3. Also look at the voltage spike and make sure the peak value does not exceed the voltage rating of your transistors. The general rule is if the wave form is not correct, drive the core harder into saturation—i.e. more turns on the primary.

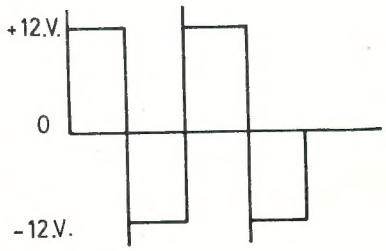


Fig. 3.

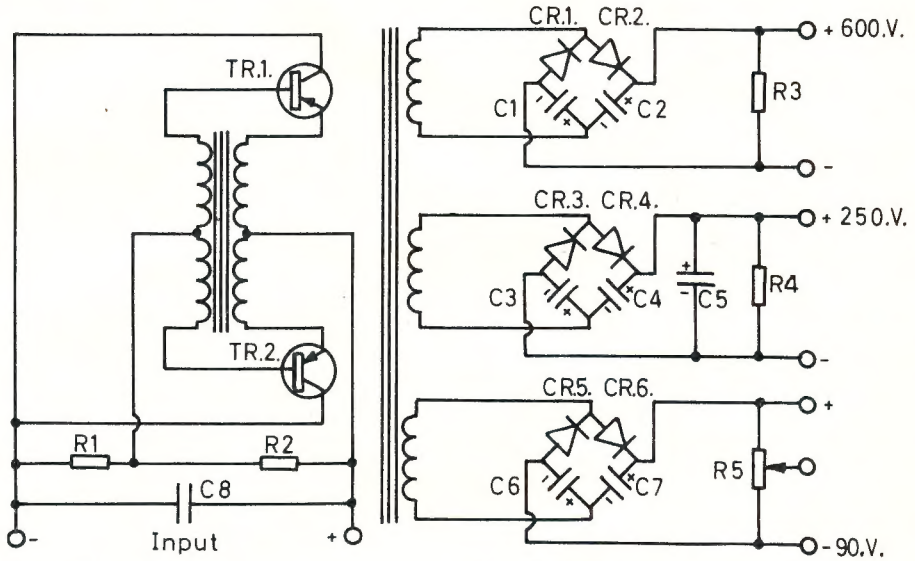
I might comment that when I attempted to operate at a frequency of 2,000 c.p.s. with this core I obtained a bad wave form. Actually, even at 1,000 c.p.s. the square wave is not perfect, but it is close enough to allow satisfactory operation.

Once the wave form looks satisfactory, you can now proceed to finish the unit. Wrap the feedback winding with two layers of paper. The sequence that the remaining windings are put on with is not important, except remember—the only winding which can be adjusted by adding or subtracting turns will be the last one put on! For the h.v. and l.v. secondaries, where a large number of turns is required, it will be best to use a winding shuttle. This can be an ice cream stick or a narrow piece of heavy cardboard with notches cut in each end. It may be necessary to make several splices in the h.v. winding. When a splice is made try to have it come out on the outside of the toroid, rather than on the inside where the wire is very close wound. Put one layer of insulating paper between layers of the same winding and two or three layers between windings. When the transformer is completed, put a layer of plastic tape around the outer perifery to protect the wire. The entire converter circuit to be used is shown in Fig. 4. Again, the placement of parts is not critical. It might pay to test the oscillator section before all the other parts are put into place. With the capacity values shown, the l.v. ripple at full load should be the order of 0.025% and the h.v. ripple at full load less than 1.0%. With my unit, the actual operating frequency turned out to be about 980 c.p.s.

In conclusion, let me make some general statements about this type of converter. The circuit should work with practically any pair of transistors, even if they are quite mismatched. If, however, they have a very low gain—i.e. say less than 40—some difficulty may be experienced in getting the unit to start oscillating. This problem can be overcome by adjusting the divider network, resistors R1 and R2, to put a slightly more forward bias on the bases.

I have tried to pick a converter with characteristics that might be of most interest to the majority of people. I run my TR3 at this lower input to conserve the battery of my car, and I have had most satisfactory results. However, if one wishes to make a higher power unit, let me give the following advice. It is a very difficult problem to look at a core, use the transformer equation, and predict the maximum power output obtainable. As I stated earlier, the reaction of the secondary on the primary has the effect of forcing the core out of saturation, and this particular load point is best found experimentally. To keep on the safe side when choosing your core try to get one with a fairly small cross-sectional area, but a large circumference. This will assure that there is enough winding space to properly saturate the core—i.e. room to put more turns on the primary if you have to. As a rough guide use the information given in this article about the core used. The maximum v.a. rating for the size appears to be about 150 watts.

Finally, I must make an acknowledgment to VK4ZAX, Dane Horgan. It was through Dane's help that I was able to overcome many of the problems that I ran into.



C1, C2—16 μF., 500v.w.
C3, C4—32 μF., 300v.w.
C5—8 μF., 500v.w.
C6, C7—8 μF., 150v.w.
C8—500 μF., 18v.w.
R1—150 ohms, 5w.
R2—2.5 ohms, 10w.
R3—560K ohms, 1w.
R4—560K ohms, 1w.
R5—25K ohms potentiometer.
CR1, CR2—1,000 p.i.v., 500 mA.
CR3, CR4—400 p.i.v., 400 mA.
CR5, CR6—Any diode of at least 100 p.i.v.
TR1, TR2—Any pair of transistors with Vce greater than 30 volts and Ic greater than 15 amp.

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SOME SIX-METRE ANTENNAE

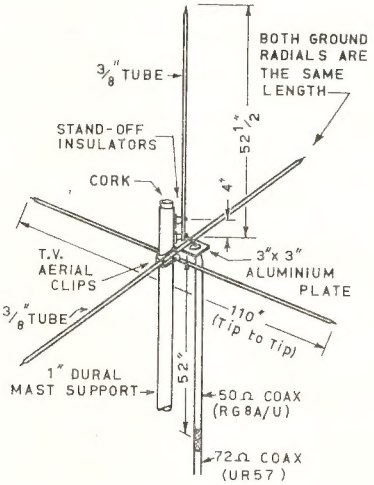
ROGER HARRISON, VK3ZRY*

IF you operate, or intend to operate, on six metres, either on the net frequencies or all over the band, then these antennae may help you radiate all that r.f. you may have.

I am not strictly a net frequency operator and my rig is capable of working from 52 to 54 Mc., but I spend most of my time on 53.032 Mc. The antenna polarisation for this frequency in VK3 is vertical and I built the two ground planes to be described, with this in mind.

QUARTER WAVE GROUND PLANE

The first antenna is a normal type quarter wave ground plane and I claim no originality for it. The construction details are fairly clear (or should be) from the accompanying diagram (Fig. 1). The impedance at the base of this ground plane is approximately 36Ω and some sort of matching device was needed to match the 70Ω co-ax I had. This took the form of a "Q"-match and a second diagram (Fig. 2) gives details of which are the same for both the quarter wave and three-quarter wave ground planes.



1/4 WAVE GROUND PLANE

Fig. 1.

The ground plane radials are attached to the supporting mast with standard ⅜" element to 1" boom clamps, made by various t.v. aerial manufacturers. The radials are at right angles and situated about ½" (centre to centre), one above the other. This arrangement is used on both the quarter and three-quarter wave ground planes.

The stand-off insulators supporting the vertical radiator are either plastic or ceramic and about 1" high. They are mounted 4" centre to centre on the 1" mast support.

The lower one is about 1" above the ground plane radial nearest to the top or as close as you can situate it (depends on the insulator used). An aluminium bracket is mounted underneath the bolt that holds the topmast ground radial to the mast and a co-ax connector (Belling Lee or Amphenol) mounted in the centre.

The centre pin of the socket is connected via a short heavy wire to a solder lug mounted under the bolt on the lower insulator. To protect the co-ax socket from the effects of the weather, cover the exposed portion in araldite or putty or sealing compound.

So as not to strain relations with either family or neighbours, shove a large cork (champagne?) in the top end of the 1" support mast and flatten the ends of the ⅜" elements in a vice for about ½" of their length and file the corners round.

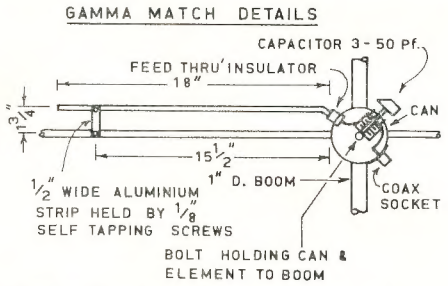

GAMMA MATCH DETAILS
CAPACITOR 3 - 50 Pf.
FEED THRU INSULATOR
18"
CAN
1 1/4"
15 1/2"
1" D. BOOM
1/2" WIDE ALUMINIUM STRIP HELD BY 1/8" SELF TAPPING SCREWS
COAX SOCKET
BOLT HOLDING CAN & ELEMENT TO BOOM
Some adjustment of the shorting bar may be needed to achieve lowest S.W.R.
Put Baked Beans can underneath the boom with the open end down.

Fig. 2.

THREE-QUARTER WAVE GROUND PLANE

Well, so much for the quarter wave ground plane. The three-quarter wave ground plane is almost exactly the same. I built this huge contraption because it was suggested to me as a joke—it's not funny any more, mainly because it works!

It has about 4 db. gain and two radiation lobes in the vertical plane. One lobe, a very low angle one (about 5° to 10°) contains very little radiated power. The other lobe has a radiation angle of about 50° to the horizontal and radiates the most power.

Funnily enough, I found this antenna radiates and receives a stronger signal than the quarter wave ground plane. This could be attributed to my location. I have the reputation with the locals of being the only underground operator on six metres. I am completely surrounded by hills, north, south, east and west, none of which is any lower than 80 feet. My theory is that the signal is diffracted at the crest of the hills—but that's only my theory.

The vertical radiator on the three-quarter wave ground plane is three times as long as the quarter wave (seems reasonable) and has to be supported at a half wave from the base. The guy wires (?) for this job are nylon fishing line and are all tied to the half wave point and taken down and tied to the tips of the ground plane radials. A slight tension must be applied to each one. When completed the vertical radiator should be roughly vertical, if it isn't, loosen or tighten the appropriate guy until it is.

All other constructional details are the same as for the quarter wave ground plane and indeed if you want to change from quarter wave to three-quarter wave ground plane, all you would need to do is change the vertical radiator. I would suggest, for added strength, that you insert about twelve feet of ¼" dural rod inside the ⅜" vertical radiator tubing. This would prevent it from bending or snapping in a gusty or strong wind.

3/4 WAVE GROUND PLANE

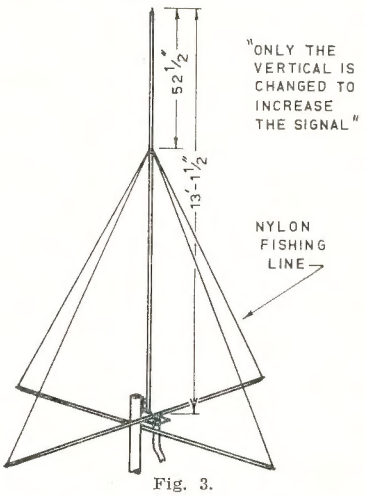


Fig. 3.

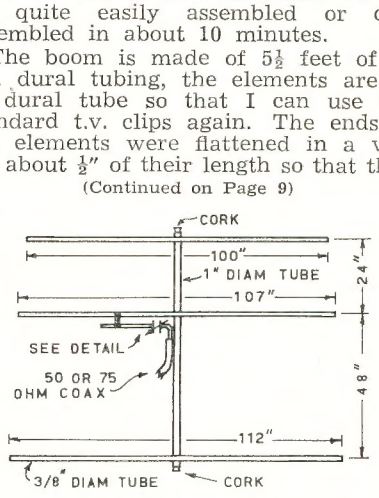
THREE-ELEMENT BEAM

The third antenna is a three-element beam. It can be used either vertically or horizontally. It has roughly 8 db. of forward gain and well over 25 db. front to back ratio. The side lobes are well down too.

I have used this beam at a number of portable locations, both in VK3 and VK2 and once in VK4. Much DX has been worked as well as locals. It can be quite easily assembled or disassembled in about 10 minutes.

The boom is made of 5½ feet of 1" o.d. dural tubing, the elements are of ⅜" dural tube so that I can use the standard t.v. clips again. The ends of the elements were flattened in a vice for about ½" of their length so that they

(Continued on Page 9)

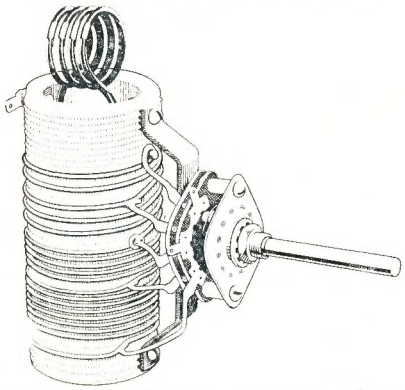


3 ELEMENT BEAM

Fig. 4.

* 1 Mary St., North Balwyn, Vic.

PI-COUPLERS



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1-16	½"	16	3"	No. 3003	5/3
2-08	⅝"	8	3"	No. 3006	6/3
2-16	⅝"	16	3"	No. 3007	6/3
3-08	¾"	8	3"	No. 3010	7/4
3-16	¾"	16	3"	No. 3011	7/4
4-08	1"	8	3"	No. 3014	8/5
4-16	1"	16	3"	No. 3015	8/5
5-08	1¼"	8	4"	No. 3018	10/6
5-16	1¼"	16	4"	No. 3019	10/6
8-10	2"	10	4"	No. 3907	13/9

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(equiv. B. & W. No. 3907-7")
7" length, 2" diam., 10 t.p.i., **24/6**

References: A.R.R.L. Handbook, 1961; "QST," March 1959; "Amateur Radio," Dec. 1959

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(Useful for sampling r.f. in transmission line for c.r.o. measurement.)
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(Full instruction book supplied)

GELOSO KIT FOR D.S.B. TRANSMITTER

The following components comprise the GELOSO Kit for construction of D.S.B. Transmitter. For circuit details refer Nov. '65 issue of "Electronics Australia".

4/105 Crystal controlled Beat Frequency Oscillator **£12/10/0**
N.1657 Calibrated Dial, Pointer and Escutcheon **£2/16/0**
N.4/113 Pi-Coupler **£2/3/0**
N.771 Condenser **£1/19/6**
N.774 Condenser **£1/19/6**
N.17634 All Wave R.F. Choke **8/6**

All plus 12½% Sales Tax.

Valves not supplied with VFO.
Valves for VFO: 6U8, 6AH6, 6CL6.

P.M.G. TYPE MORSE CODE KEYS

Solid brass P.M.G. Type Morse Code Keys on heavy bakelite base.
Price: 45/- (inc. S.T.)

"JABEL" TR-14 REAMERS

Ideal for clean finish on small panel holes and cleaning out for neat fit.

Price: 10/6 each.

WILLIAM WILLIS & CO. PTY. LTD.

428 ELIZABETH STREET. MELBOURNE, C.1 **Phone 34-6539**

COUPLING COMMAND UNITS

BC454 AND BC453

ALL Amateurs are familiar with the excellent selectivity properties of the BC453 unit covering 190-550 Kc., and many who read this will have used the unit as a "Q5'er". However, when the i.f. of the preceeding communications receiver is higher than 550 Kc., conversion to the 85 Kc. channel demands another approach. Such was the problem at this location where the preceeding Command BC454 had an i.f. of 1,415 Kc.

The grid lead to the 12K8 of the BC453 was removed, thus isolating it from its own r.f. stage. Output from the last 1,415 Kc. i.f. can was passed through a ¼" co-axial link to the grid cap of the "Q5'er" 12K8 and the outer braid grounded to both units—thus the conversion operation was achieved without "butchering" a piece of precision equipment.

How? Simple arithmetic and heterodyning principles explain.

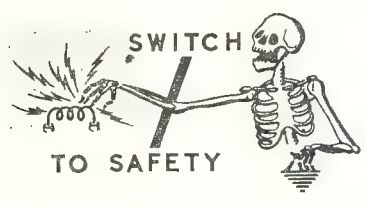
For conversion of 1,415 Kc. to 85 Kc. two frequencies can be used: 1,500 Kc. or 1,330 Kc. Consider the first of these frequencies. By tuning the dial of the "Q5'er" to 215 Kc. the local oscillator generates 300 Kc., the 5th sub-harmonic of 1,500 Kc. It is the peculiar property of every mixer or converter valve to produce at its anode useful i.f. outputs that are the sum and difference not only of the input signal and the local oscillator fundamentals, but also of the input signal and "harmonics" of the local oscillator: even though both signals may be pure sine waves!

Depending on whether you consider using 1,500 Kc. or 1,330 Kc. as the converting harmonic, it is obvious that a number of positions on the "Q5'er" dial will perform the conversion satisfactorily. Conversion efficiency varies inversely as the integral value of the sub-harmonic, being approximately 60 umhos when using an oscillator frequency of 300 Kc. in the case of the 12K8. However, the noise factor does not deteriorate.

There is more than abundant gain with both units working with a h.t. supply of 200 volts, and lessening of gain in the conversion was somewhat of a blessing.

These ideas may aid some Amateur in similar difficulties. The basic principle also has promise when considering the construction of high frequency converters. The stability of the combined units is adequate for the "not too fussy pauper Amateurs". S.s.b. QSO's can be resolved and held for considerable periods once the sets have warmed.

—Bro. P. L. Ellis.



Book Review

RADIO AMATEUR'S V.H.F. MANUAL
By Edward P. Tilton, W1HDQ

This long awaited addition to the A.R.R.L. publications is a must for the book shelves of all Amateurs interested in v.h.f. Although most of the material has appeared from time to time in "QST," it has been well edited by Ed Tilton, and the book provides a very complete coverage of v.h.f. with a good balance of theory and constructional articles. Most of the components and valves are available in Australia and even the majority of transmitter circuits are suitable for our power limits.

The introductory chapter gives an interesting history of v.h.f. and is followed by chapters on propagation, receivers, converters, transmitters, antenna and feed systems, test equipment and handy hints for experimenters.

A soft covered book, 6½" by 9½", it contains 314 pages of text well illustrated with diagrams and photographs.

Publisher: The A.R.R.L. Inc., U.S.A. Price in Australia, 31/6 plus postage. Review copies from Technical Book and Magazine Co. Pty. Ltd., 295 Swanston St., Melbourne, and McGills Authorised Newsagency, 183 Elizabeth St., Melbourne.

V.H.F. ANTENNA HANDBOOK
By Jim Kyle, K5JKX

All v.h.f. Amateurs realise that the key to the success of a v.h.f. station is a good antenna system. Nearly all v.h.f. Amateurs experiment with their antennae more than any other part of their equipment. This book is for those people.

Written by an Amateur who has spent many years investigating antenna systems for v.h.f., the book covers practically every type of antenna ever used on these frequencies and provides sufficient information about each one to enable anybody to duplicate it, or adapt it for his own particular requirements.

Chapters include basic concepts, the dipole and its relatives, phased arrays, parasitic arrays (Yagis), circularly polarised antennae, non-resonant antenae, reflective antennae, practical antenna techniques, manufacturers' section, and Amateur and photo section.

A soft covered book, 8½" by 11", it contains 61 pages illustrated with many diagrams and a few photographs.

Publisher: 73 Inc., U.S.A. Price in Australia, 25/-, post and packing 1/3. Our copy from Technical Book and Magazine Co. Pty. Ltd., 295 Swanston St., Melbourne.

☆

SOME SIX-METRE ANTENNAE

(Continued from Page 7)

would not whistle in a wind. The ends of the boom are plugged with large corks (I drink a lot of champagne!).

Make sure all the elements are in the one plane and parallel to one another, a "skew wiff" beam does not look the best.

The gamma match is pretty standard and should be tuned up for best s.w.r. with a bridge inserted in the line somewhere near the antenna. The gamma match capacitor was protected from the weather by a small 4 oz. baked beans tin. The lid (or one end to be exact) was removed, the contents removed and eaten, the can washed, dried and a hole drilled in the centre of the end. This was placed on the bolt holding the driven element onto the boom.

The mounting position for your gamma match capacitor and co-ax socket can then be determined. A feed-through insulator is mounted convenient to the gamma match arm (see diagram, Fig. 2). This rather hairy arrangement survived a number of violent storms in VK2 and VK4 without ill effects.

Well that's about it. If you are slightly confused or the diagrams are not too clear (apologies to the printer), then give me a shout on the air or drop me a line (please include s.a.e.) and I'll see if I can confuse you further. Don't forget, they are just ordinary little antennae, not supercalifragilistic-expidaliocious beams!

☆

NEW CALL SIGNS

AUGUST, 1965

VK1JL—J. Lauten, 28 Atherton St., Downer.
VK1JW—J. B. S. Waugh, C/o. Dr. J. Lovering, 127 Buxton St., Deakin.
VK1ZFB—F. J. Beckett, 9 Clarke St., Yarralumla.
VK2FR—O. R. French, 78 Hercules St., Dulwich Hill.
VK2HJ—R. L. Francis, 9a/3 Grainger Ave., Ashfield.
VK2UF—M. Meechan, Flat 709, 54 High St., North Sydney.
VK2AIK—J. A. Bowgen, C/o. Normandie Hotel, North Wollongong.
VK2AJT—J. R. Walker, 10 Leatham Ave., Nowra.
VK2AJU—M. G. Burleigh, Oaky River Power Station, Wollomombi.
VK2APS -P. C. Goldstone, 134 Byangum Rd., Murwillumbah.
VK2BMF—M. N. Featherstone, 5 De Villiers Ave., Chatswood.
VK2ZDO—W. J. Dockrill, 24 Valda St., Blacktown.
VK2ZHH/T—D. Horton, 122 Webster Rd., Liverpool.
VK3ZPY—R. J. Gowland, 19 Park Rd., Middle Park.
VK4AL—A. H. F. Nichols, 20 Headfort St., Greenslopes.
VK4EE—E. C. Bick, 55 Allowrie St., Stafford.
VK4GX -F. Barraclough, 16 Gail St., Kedron.
VK4HX—W. R. Boyldew, Hesp Park, Stratford, via Cairns.
VK4NN—Maryborough State High School (Boys) Radio Club, Kent St., Maryborough.
VK4NZ—J. Stone, Thompson Ave., Mt. Morgan.
VK4QX—J. A. Mackay, 84 Mill St., Gordonvale.
VK5AE—B. D. Abbott, 6 Invergowrie Ave., Highgate.
VK5OW—O. C. Winterton, Tatachilla Rd., McLaren Vale.
VK5SH—P. Eccleston, 2 Wecoma St., Holden Hill.
VK5VW—S. Atkinson, 3 Bosville Gr., Campbelltown.
VK5WZ—F. G. Anear, 4 Liston St., Parkside.
VK5ZM—K. M. Matthews, 9 Anglesey Ave., St. Georges.
VK5ZCJ—H. J. Schrickel, Lot 70, Tristania Tce., Dernancourt.
VK5ZIJ—A. R. Jenkins, Flat 2, 316 South Rd., Glandore.
VK6CU—R. D. Coleman, Off Shore Navigation Inc., C/o. W.A.P.E.T., Barrow Island.
VK6HW—J. H. Williams, 38 Williams Rd., Melville Heights.
VK7CR—C. Russell-Green, 99 Marlyn Rd., Sth. Hobart.
VK7KM—K. G. McCracken, 153 Bathurst St., Hobart.
VK7OZ—W. E. Dixon, 122 Main Rd., Claremont.
VK7ZRR—R. F. Rolls, 194 Waterworks Rd., South Hobart.
VK8MC—B. A. McRae, Station: Tennant Creek; Postal: P.O. Box 74, Tennant Creek.
VK8MD—B. A. McRae, Portable. Postal: P.O. Box 74, Tennant Creek.
VK9DI—D. I. Ralph, C/o. A.W.A., P.O. Box 13, Lae, N.G.
VK9GN—G. A. Nurkka, C/o. Summer Institute of Linguistics, Ukarumpa, N.G.

RESULTS OF 1965 R.D. CONTEST

SOUTH AUSTRALIA WINS AGAIN

Honours go to South Australia this year for a large marginal win.

This is attributed to this State watching closely the three significant factors which assist a State to win this Contest, i.e.—

(1) High top-six scoring.
(2) High State licence participation.
(3) High individual entrant scoring.

It was unfortunate to see VK4 with the Highest Average of the Top Six Logs, not supported by a high percentage participation.

The F.C.C. cannot stress too strongly the need for higher accuracy in submission of entries.

Two main errors were time discrepancies (G.M.T. and E.A.S.T. were both acceptable for this Contest), and transcription from station log to entry log.

The continuing success of this Contest is a constant reminder of our appreciation to those Amateurs who gave their lives in World War II., so that we may enjoy this hobby and continue to do so.

Again our congratulations to South Australia for a good effort.

—Federal Contest Committee, W.I.A.

DETAILS OF STATE SCORES

State	Log Entry	Licences	%	Total State Score	Aver. Top Six Logs	State Points
New South Wales	109	1,275	8.6	19,751	796	2,495
Victoria	62	1,135	5.5	12,508	623	1,311
Queensland	68	505	13.5	13,174	814	2,592
South Australia	91	460	19.8	18,096	769	4,172
Western Australia	56	250	22.4	8,080	506	2,316
Tasmania	32	140	23.0	6,605	590	2,096

FINAL STATE SCORERS

South Australia	4,172	points
Queensland	2,592	,,
New South Wales	2,495	,,
Western Australia	2,316	,,
Tasmania	2,096	,,
Victoria	1,311	,,

STATE TROPHY

South Australia

AWARD WINNERS

Open—

VK1VK—S. Grimsley	622	pts.
2AHM—R. Whyte	1116	,,
3XY—R. Prowse	663	,,
4RH—A. L. Hoey	1091	,,
5NO—L. H. Vale	1226	,,
6SM—W. H. Saw	510	,,
7DK—D. H. Kelly	938	,,
8KK—D. A. McArthur	439	,,
9XI—Christmas Is. A.R.C.	132	,,

Phone—

VK1AU—C. Harvey	710	pts.
2RS—D. Haberecht	856	,,
3MO—I. Williams	1065	,,
4PQ—N. Martin	783	,,
5BQ—B. Cleworth	741	,,
6RY—R. Chamberlain	759	,,
7MS—D. Slowan	740	,,
8DI—B. Burns	102	,,
9AG—A. Nunn	354	,,
0KH—K. Hicks	414	,,

C.w.—

VK2VN—M. Myers	507	pts.
3XB—I. Stafford	436	,,
4HH—H. Hilder	258	,,
5MY—H. Roberts	411	,,
6WT—D. Couch	380	,,
7SM—S. G. Moore	440	,,
8UX—L. W. Wallbridge	17	,,
9CJ—C. Marley	133	,,

Receiving—

L2188—C. Christiansen	806	pts.
L3100/P—S.w.l. Group	715	,,
L4152—D. Hunter	571	,,
L5065—A. F. Raftery	817	,,
L6021—P. Drew	925	,,
S.W.L.—G. Johnston	1011	,,
L9004—J. Corvan	193	,,

V.H.F./U.H.F. Section—

VK2ZCF—R. Norman	90	pts.
3ZNJ—K. Jewell	73	,,
4ZLO—L. Davies	16	,,
4ZPL—P. Lindsay	16	,,
5ZTM—T. Marshall	56	,,
6HK—D. Graham	21	,,
7ZAS—G. C. D'Emdem	10	,,
7ZJG—J. Grace	10	,,

AUST. CAPITAL TERRITORY

(Licences 48)

Top Six Logs—

VK1AU	710 pts.	VK1DA	282 pts.
1VK	622 ,,	1RD	185 ,,
1VP	500 ,,	1AOP	133 ,,

Open—

VK1VK	622 pts.	VK1RD	185 pts.
1DA	282 ,,		

Phone—

VK1AU	710 pts.	VK1JG	73 pts.
1VP	500 ,,	1AS	40 ,,
1AOP	133 ,,	1LF	14 ,,
1KM	97 ,,	1ML	7 ,,

Check Logs: VKs 1QL, 1DD.

Total Points 2663
Log Entry 11
Average Top Six 405

Calculation:
= 405 + (11 ÷ 48 × 2663)
= 405 + (0.23 × 2663)
= 405 + 612
= 1017

NEW SOUTH WALES

(Licences 1275)

Top Six Logs—

VK2AHM	1116 pts.	VK2BO	756 pts.
2RS	856 ,,	2APK	684 ,,
2DO	778 ,,	2ANO	587 ,,

Open—

VK2AHM	1116 pts.	VK2CK	238 pts.
2DO	778 ,,	2AGS	188 ,,
2BO	756 ,,	2ATT	131 ,,
2APK	684 ,,	2AJQ	116 ,,
2SG	491 ,,	2OT	75 ,,
2PA	425 ,,	2XU	42 ,,
2SU	261 ,,	2BSB	31 ,,

Phone—

VK2RS	856 pts.	VK2EK	76 pts.
2ANO	587 ,,	2BCP	74 ,,
2VV	560 ,,	2LV	71 ,,
2AGF	554 ,,	2WT	70 ,,
2XT	473 ,,	2OK	67 ,,
2AEC	473 ,,	2AAB	63 ,,
2ASI	472 ,,	2AHA	63 ,,
2AFD	400 ,,	2PF	62 ,,
2VU	382 ,,	2BG	54 ,,
2AKF	369 ,,	2CU	52 ,,
2ATZ	306 ,,	2ACD	50 ,,
2BMK	242 ,,	2NZ	50 ,,
2KM	232 ,,	2AKL	49 ,,
2FM	220 ,,	2LA	42 ,,
2AUC	188 ,,	2AIC	42 ,,
2PN	184 ,,	2AKV	42 ,,
2MW	170 ,,	2AWR	40 ,,
2OH	169 ,,	2BCF	39 ,,
2ACZ	153 ,,	2AW	38 ,,
2BJO/P	152 ,,	2AXJ	37 ,,
2APQ	144 ,,	2VH	36 ,,
2ALV	143 ,,	2AUQ	35 ,,
2AAK	131 ,,	2UJ	35 ,,
2AVT	129 ,,	2XP	30 ,,
2OX	129 ,,	2ASC	29 ,,
2AIA	109 ,,	2ABB	29 ,,
2RU	108 ,,	5ZP/2	28 ,,
2TS	105 ,,	2AIM	27 ,,
2ATS	100 ,,	2OE	25 ,,
2QZ	99 ,,	2AMX	24 ,,
2SJ	96 ,,	2EY	17 ,,
2AQJ	89 ,,	2OM	12 ,,
2WD	87 ,,	2AKX/P	10 ,,
2AQ	88 ,,	2RJ	9 ,,
2ACQ	82 ,,	2EZ	6 ,,
2AVJ	78 ,,		

C.w.—

VK2VN	507 pts.	VK2VA	74 pts.
2QL	491 ,,	2IC	67 ,,
2AGI	365 ,,	2ZC	67 ,,
2QK	335 ,,	2JM	55 ,,
2GT	280 ,,	2AKE	51 ,,
2YB	277 ,,	2HZ	50 ,,
2GT	208 ,,	2JY	44 ,,
2EO	151 ,,	2MT	41 ,,
2PU	147 ,,	2GW	38 ,,
2PQ	140 ,,	2RA	31 ,,
2ZO	111 ,,	2AAH	17 ,,
2GD	103 ,,		

Check Logs: VKs 2KD, 2XA.

Total Points 19751
Log Entry 109
Average Top Six 796

Calculation:
= 796 + (109 ÷ 1275 × 19751)
= 796 + 1698.6
= 2495

VICTORIA

(Licences 1135)

Top Six Logs—

VK3MO	1065 pts.	VK3EG	517 pts.
3XY	663 ,,	3QV	486 ,,
3ZL	530 ,,	3ACW	474 ,,

Open—

VK3XY	663 pts.	VK3KC	67 pts.
3QV	486 ,,	3GZ	63 ,,
3ACW	474 ,,	3OH	35 ,,
3APN	164 ,,	3UM	30 ,,
3AZL	93 ,,		

Phone—

VK3MO	1065 pts.	VK3TG	122 pts.
3ZL	530 ,,	3LW	119 ,,
3EG	517 ,,	3VK	114 ,,
3RV	465 ,,	3WW	104 ,,
3ASN	450 ,,	3VL	101 ,,
3AKS	408 ,,	3ZU/P	98 ,,
3EF	395 ,,	3ABP	90 ,,
3AGM	370 ,,	3DY	86 ,,
3ARJ	330 ,,	3AIE	78 ,,
3SM	319 ,,	3AGZ	57 ,,
3ABP	310 ,,	3IE	53 ,,
3AWT	300 ,,	3ANI	49 ,,
3AWY	259 ,,	3AKB	46 ,,
3NN	250 ,,	3ABA	37 ,,
3GC	243 ,,	3DS	33 ,,
3AKO	236 ,,	3WK	29 ,,
3AZM/P	187 ,,	3PG	24 ,,
3PW	139 ,,	3APJ	24 ,,
3AAO	128 ,,	3RN	16 ,,
3VZ	125 ,,	3ALD	15 ,,

C.w.—

VK3XB	436 pts.	VK3BL	139 pts.
3AXK	394 ,,	3ABR	126 ,,
3RJ	233 ,,	3ANA	121 ,,
3ARV	173 ,,	3AWM	83 ,,
3TL	155 ,,	3ARX	60 ,,
3AMS	146 ,,	3AR	30 ,,
		3KS	16 ,,

Check Logs: VKs 3AFD, 3AKW, 3ALL.

Total Points 12508
Log Entry 62
Average Top Six 623

Calculation:

= 623 + (62 ÷ 1135 × 12508)
= 623 + 688
= 1311

QUEENSLAND

(Licences 505)

Top Six Logs—

VK4RH	1091 pts.	VK4BQ	768 pts.
4LT	921 ,,	4JI	677 ,,
4PQ	783 ,,	4VX	643 ,,

Open—

VK4RH	1091 pts.	VK4UC	345 pts.
4LT	921 ,,	4VB	265 ,,
4JI	677 ,,	4QW	115 ,,
4AK	393 ,,	4HR	95 ,,

Phone—

VK4PQ	783 pts.	VK4RL	61 pts.
4BQ	768 ,,	4HC	60 ,,
4VX	643 ,,	4GS	53 ,,
4RZ	507 ,,	4TF	50 ,,
4UW	501 ,,	4NS	48 ,,
4CS	445 ,,	4AN	47 ,,
4FK	397 ,,	4PS	46 ,,
4CK	365 ,,	4CZ	42 ,,
4RO	335 ,,	4ZZ	32 ,,
4SD	320 ,,	4KS	31 ,,
4XY	273 ,,	4JA	28 ,,
4JM	249 ,,	4FE	28 ,,
4EZ	253 ,,	4FY	26 ,,
4NK	249 ,,	4DV	25 ,,
4WP	237 ,,	4BG	24 ,,
4DO	219 ,,	4GG	24 ,,
4AF	137 ,,	4XJ	19 ,,
4HB	134 ,,	4CW	18 ,,
4OF	127 ,,	4MF	16 ,,
4OL	123 ,,	4RW	16 ,,
4OR	92 ,,	4GT	14 ,,
4HA	84 ,,	4HW	12 ,,
4FX	81 ,,	4VS	9 ,,
4CP	81 ,,	4PR	7 ,,
4PU	74 ,,	4LE	7 ,,
4EH	66 ,,	4SA	6 ,,
4LB	63 ,,	4HZ	5 ,,

C.w.—

VK4HH	258 pts.	VK4JF	161 pts.
4SN	209 ,,	4XP	126 ,,
4VR	195 ,,	4WO	63 ,,

Check Logs: VKs 4PJ, 4XC, 4VO.

Total Points 13174
Log Entry 68
Average Top Six 814

Calculation:

= 814 + (68 ÷ 505 × 13174)
= 814 + (0.135 × 13174)
= 814 + 1778
= 2592

SOUTH AUSTRALIA

(Licences 460)

Top Six Logs—

VK5NO	1226 pts.	VK5TC	616 pts.
5GZ	815 ,,	5CV	612 ,,
5BQ	741 ,,	5EF	607 ,,

Open—

VK5NO	1226 pts.	VK5FM	244 pts.
5GZ	815 ,,	5RG	239 ,,
5TC	616 ,,	5DE	142 ,,
5CV	612 ,,	5HM	86 ,,
5WC	436 ,,	5JN	73 ,,
5WW	421 ,,	5VE	8 ,,
5EJ	330 ,,		

Phone—

VK5BQ	741 pts.	VK5DR	82 pts.
5EF	607 ,,	5KS	77 ,,
5FT	490 ,,	5SS	74 ,,
5OH	479 ,,	5QR	73 ,,
5NN	474 ,,	5WH	73 ,,
5GV	451 ,,	5BV	72 ,,
5TJ	390 ,,	5WI	69 ,,
5NY	353 ,,	5OK	69 ,,
5EN	354 ,,	5KE	67 ,,
5GX	331 ,,	5WL	55 ,,
5ZZ/T	327 ,,	5JC	53 ,,
5EK	311 ,,	5TU	53 ,,
5AX	275 ,,	5KY	52 ,,
5FL	264 ,,	5TL	43 ,,
5LC	263 ,,	5LB	41 ,,
5IZ	255 ,,	5MS	39 ,,
5TY	248 ,,	5KF	37 ,,
5LQ	230 ,,	5CL	35 ,,
5TM	218 ,,	5CJ	34 ,,
5GQ	184 ,,	5CI	33 ,,
5WG	176 ,,	5OF	33 ,,
5UJ	175 ,,	5XM	32 ,,
5ZQ	172 ,,	5BP	31 ,,
5LN	156 ,,	5GF	28 ,,
5LZ	150 ,,	5NH	26 ,,
5ON	138 ,,	5UF	25 ,,
5WN	137 ,,	5CO	24 ,,
5BI	134 ,,	5PM	24 ,,
5DF	134 ,,	5JB	22 ,,
5BG	119 ,,	5XL	20 ,,
5MM	97 ,,	5JA	19 ,,
5EQ	90 ,,	5NF	12 ,,

C.w.—

VK5MY	411 pts.	VK5FE	154 pts.
5FO	369 ,,	5AU	91 ,,
5KO	300 ,,	5KU	64 ,,
5XK	283 ,,	5OR	61 ,,
5ZF	272 ,,	5RK	48 ,,
5ZC	249 ,,	5BS	33 ,,
5LD	161 ,,	5JG	22 ,,

Check Logs: VKs 5JO, 5ZE, 5PH, 5OB, 5JT, 5KC, 5WO, 5OC, 5PS, 5GP.

Total Points 18096
Log Entry 91
Average Top Six 769

Calculation:

= 769 + (91 ÷ 460 × 18096)
= 769 + (0.198 × 18096)
= 769 + 3403
= 4172

WESTERN AUSTRALIA

(Licences 250)

Top Six Logs—

VK6RY	759 pts.	VK6XY	467 pts.
6SM	510 ,,	6CW	408 ,,
6RU	502 ,,	6DA	393 ,,

Open—

VK6SM	510 pts.	VK6VK	177 pts.
6RU	502 ,,	6BE	111 ,,
6CW	408 ,,	6PH	96 ,,
6EZ	201 ,,		

Phone—

VK6RY	759 pts.	VK6BA	62 pts.
6XY	467 ,,	6MM	60 ,,
6DA	393 ,,	6XG	53 ,,
6DT	348 ,,	6XO	49 ,,
6LR	334 ,,	6CP	40 ,,
6AV	260 ,,	6WI	40 ,,
6KH	246 ,,	6WU	40 ,,
6DR	243 ,,	6VW	37 ,,
6DI	177 ,,	6VM	36 ,,
6WY	159 ,,	6MA	32 ,,
6RX	135 ,,	6RW	31 ,,
6CY	135 ,,	6YL	28 ,,
6CD	125 ,,	6JO	27 ,,
6HK	116 ,,	6GH	26 ,,
6CF	112 ,,	6AQ	24 ,,
6TX	99 ,,	6TK	23 ,,
6WL	88 ,,	6SN	22 ,,
6KJ	86 ,,	6LS	21 ,,
6KW	82 ,,	6GL	18 ,,
6TY	76 ,,	6BS	18 ,,
6ZZ	71 ,,	6DC	16 ,,
6CR	63 ,,		

C.w.—

VK6WT	380 pts.	VK6JK	93 pts.
6RS	161 ,,	6RP	43 ,,
6AS	115 ,,	6GA	28 ,,

Check Logs: VKs 6LM, 6GP, 6NJ.

Total Points .. 8080
Log Entry 56
Average Top Six . 506

Calculation:

= 506 + (56 ÷ 250 × 8080)
= 506 + (0.224 × 8080)
= 506 + 1810
= 2316

TASMANIA

(Licences 140)

Top Six Logs—

VK7DK	938 pts.	VK7KZ	442 pts.
7MS	740 ,,	7SM	440 ,,
7XL	577 ,,	7JF	400 ,,

Open—

VK7DK	938 pts.	VK7TX/P	360 pts.
7KZ	442 ,,	7LZ	18 ,,
7ZZ	374 ,,		

Phone—

VK7MS	740 pts.	VK7CK	61 pts.
7XL	577 ,,	7RX	37 ,,
7JF	400 ,,	7AL	28 ,,
7SF	292 ,,	7YL	27 ,,
7TT	228 ,,	7DS	23 ,,
7RL	210 ,,	7CT	18 ,,
7SK	154 ,,	7JD	12 ,,
7MX	144 ,,	7KS	11 ,,
7KH	143 ,,	7DW	8 ,,
7EB	128 ,,		

C.w.—

VK7SM	440 pts.	VK7RY	72 pts.
7GK	321 ,,	7JB	60 ,,
7GV	176 ,,	7KA	52 ,,
7LJ	78 ,,	7BJ	33 ,,

Total Points 6605
Log Entry 32
Average Top Six .. 590

Calculation:

= 590 + (32 ÷ 140 × 6605)
= 590 + 1506
= 2096

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Open—

VK8KK .. .... 439 pts.

Phone—

VK8DI .. .... 102 pts.

C.w.—

VK8UX .. .... 17 pts.

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VK9AG	354 pts.	VK9VG	42 pts.

(Continued on Page 20)

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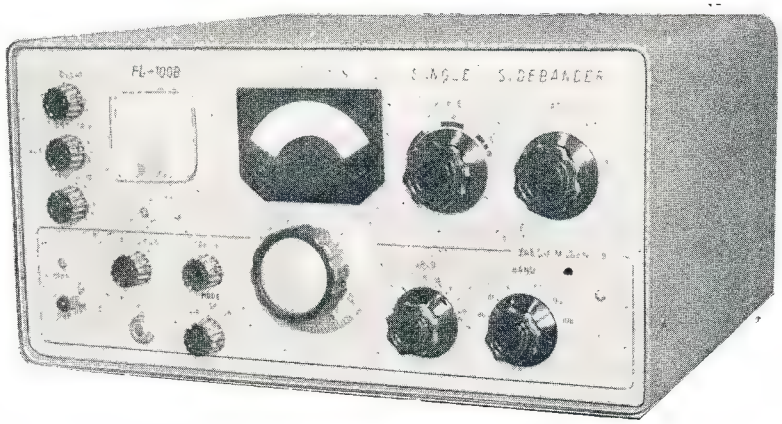

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JOHN MOYLE MEMORIAL NATIONAL FIELD DAY CONTEST, 1966

SATURDAY, 12th FEBRUARY, TO SUNDAY, 13th FEBRUARY

The Federal Contest Committee of the Wireless Institute of Australia invites all Australian Amateur and Short Wave Listeners to participate in this Annual Contest, which is held to perpetuate the memory of John Moyle, whose efforts advanced the Amateur Radio Service.

There are two divisions of this Contest, one of 24-hour duration, and the other of six-hour duration. The six-hour period has been included to encourage the operator who is unable to participate for the full 24-hour period.

Operators using 25 watts or less input to the final stage in each section will be considered for a certificate where activity warrants its issue.

It will be seen that the Federal Contest Committee has, in accordance with comments and suggestions received, made changes in the Rules. The F.C.C. hope that the alterations will increase activity and operators will again make an effort to participate in this Contest.

DATE

From 0800 G.M.T., 12th February, to 0800 G.M.T., 13th February, 1966.

OBJECTS

The operators of Portable and Mobile Stations within all VK Call Areas will endeavour to contact other Portable/Mobile and Fixed Stations in Australia and Overseas Call Areas.

RULES

1. There are two divisions, one of six (6) hours, and one of twenty-four (24) hours duration. In each division, there are six sections:—

(a) Portable/Mobile Transmitting, Phone.
(b) Portable/Mobile Transmitting, C.w.
(c) Portable/Mobile Transmitting, Open.
(d) Portable/Mobile Transmitting, Multiple Operation, open only.
(e) Fixed Transmitting Stations working Portable/Mobile Stations, open only.
(f) Reception of Portable/Mobile Stations.

2. All Australian Amateurs are encouraged to take part, Portable/Mobile operators only will be eligible for certificates. Operators will be limited to their licensed power. This power shall be derived from a self-contained and fully portable source.

(a) Portable/Mobile Stations shall not be situated in any occupied dwelling or building. Portable/Mobile Stations may be moved from place to place during the Contest.

No apparatus shall be set up on the site earlier than 24 hours prior to the Contest.

All Amateur bands may be used, but no cross band operating is permitted.

Entrants in Section (d) for Multiple Operator Stations can set up separate transmitters to work on different bands at the same time. All such units of a Multiple Operator Station must be located within an area that can be encompassed by a circle not greater than half a mile diameter.

For each transmitter of a Multiple Operator Station a separate log shall be kept with serial numbers starting from 001, and increasing by one for each successive contact. All logs of a Multiple Operator Station shall be submitted by the Operator under whose Call Sign the transmitters are working. No two transmitters of a Multiple Operator Station are permitted to operate on the same band at any time.

3. Amateurs may enter for any section in the Portable/Mobile Sections.

4. One contact per station for phone to phone, also one for c.w. to c.w. per band is permitted. Cross mode operations will not be accepted for scoring purposes.

5. Entrants must operate within the terms of their licences and in particular observe the regulations with regards to portable operation.

6. Serial numbers consisting of RS or RST report plus three figures commencing with 001 and increasing by one for each successive contact shall be exchanged.

7. **Scoring**:—

(a) **Portable/Mobile Stations:**

For contacts with Portable/Mobile Stations outside entrant's Call Area .. .. **15 points**

For contacts with Portable/Mobile Stations within entrant's Call Area .. .. **10 points**

For contacts with Fixed Stations outside the entrant's Call Area .. .. **5 points**

For contacts with Fixed Stations within the entrant's Call Area .... **2 points**

(b) **Fixed Stations:**

For contacts with Portable/Mobile Stations outside entrant's Call Area .... **15 points**

For contacts with Portable/Mobile Stations within entrant's Call Area .... **10 points**

8. The following shall constitute Call Areas: VK1, VK2, VK3, VK4, VK5, VK6, VK7, VK8, VK9, and VK0.

9. All logs shall be set out under the following headings: Date/Time (G.M.T.), Band, Emission, Call Sign, RST/No. Sent, RST/No. Received, Points Claimed. Contacts must be listed in numerical order.

In addition, there shall be a front sheet showing the following information:—

Name .. ..Address . .
Call Sign . .....Section . . .
Division . . (6-hour or 24-hour).
Call Sign of other operator/s (if any)....
Location of Portable/Mobile Station.....
From.....hours to..... hours.

A brief description of equipment used, bands used, and points claimed, followed by the declaration:

"I hereby certify that I have operated in accordance with the rules and spirit of the Contest."

Signed . Date

10. The right is reserved to disqualify any entrant who, during the Contest, has not observed the Regulations and the Rules of this Contest, or who has consistently departed from the accepted code of operating ethics.

11. The decision of the Federal Contest Manager of the Wireless Institute of Australia is final and no disputes will be entered into.

12. Certificates will be awarded to the highest scorer of each section of each division. Additional certificates may be issued at the discretion of the F.C.C.

13. Comments concerning the Contest, with particular reference to: Duration of Contest, points scoring system, Rules of Contest, would be appreciated by the F.C.M.

14. **Return of Logs:**

All entries must be postmarked not later than 28th February, 1966, and be clearly marked "John Moyle Memorial National Field Day Contest, 1966," and addressed to:

Federal Contest Manager, W.I.A., 55 Moulden Ave., Mt. Yokine, Western Australia.

RECEIVING SECTION

15. This section is open to all Short Wave Listeners in VK Call Areas. The Rules shall be the same as for the Transmitting Stations. Logs shall take the same form as for Transmitting Stations, but may omit the serial numbers received.

Logs must show the Call Sign of the Station heard, the serial number sent by it, and the Call Sign of the Station being worked.

Scoring will be on the same basis as for Transmitting Stations. It will not be sufficient to log a station calling CQ. A station may be logged once only for phone and once for c.w. in each band.

Awards: Certificates will be awarded for the highest scorer in each Call Area.

IMPROVING THE REMEMBRANCE DAY CONTEST

W. T. MITCHELL, VK3UM, Federal Communications Manager

Since this Contest was first held in 1948, it has undoubtedly held first place in the Australian Amateur's Contest Calendar. Its popularity is attributable to the fact that it is a Contest between Divisions more than individuals, all aiming to win the coveted award of the R.D. Trophy for their State. Its original objects, apart from remembering those Amateurs who gave their lives for their country, were to promote friendly rivalry between States, to be as equitable as possible for all States to win and to encourage as many Australian Amateurs as possible to enter. It has achieved these objects to some degree since its inception except that the scoring methods seem to have favoured the smaller States rather than being equitable to all.

Historically, in an attempt to meet the object of fairness to all States, four changes to the scoring system have been made over the years since 1948. I believe none of these have acted as intended. It is with this in mind, that a new method of scoring is here presented with the object of giving each State, no matter what their Amateur size, an equal chance of winning. Statistical records have been maintained since 1948, and these form a background pattern on which to base a new system of scoring.

The Contest developed in the following manner—the author and the late Ted Jenkins, VK3QK, being the originators of the scoring system, but not the subsequent modifications. The first Contest in 1948 was arranged with a sliding scale of points designed to compensate between States for distances, propagation conditions and differences in Amateur population. This scale of points has never changed, although additions by way of VK1, VK9 and VK0 scoring have been added. The 1948 winner was determined on the average of the six highest scoring logs from each State and in that year it was won by VK2. In the following year, Federal Council saw fit to add a multiplier applied to the sliding scale to produce a more equitable result. This multiplier appeared to favour the smaller States as evidenced by the wins of VK7 in 1949 and 1950.

In 1951, the multiplier was again changed in an attempt to even the scoring and this change applied until 1957. In this multiplier, the ratios of entrants to licensees occurred. The results over this seven-year period show that VK5 won twice, VK6 four times and VK7 once. In 1958, the multiplier again altered but not significantly from the previous seven years, and this time it was again won by VK5.

From 1959 to 1964, the multiplier again altered and in this period of six years, the Contest was won by VK6 and VK7 twice each, and VK4 and VK5 once each. So it can be seen that except for the first year, 1948, when there was no multiplier, the Contest has been won by the smaller States. Federal Council being aware of the need to try and even up the scoring between States, at the Convention in Perth in 1962 authorised the Executive to publish a new system originated by the author and presented at that Convention. Although not published at the time originally intended, the results of this study are now published for comment by any who wish to do so.

The writer, after a careful examination of all the facts, considered that the unevenness in the scoring system pertained because the multiplier was based on a factor of entrants to licensees per State. Whilst not detracting from the interest and activities organised by the smaller States in encouraging their members to enter even for a minimum number of contacts, it will be conceded that it is easier to obtain participation from a smaller number of members than it is from four or five times that number. This fact is borne out by a study of these figures by the author which may be plotted as a hyperbolic curve of the form:—

$$P = A \times L^{-b}$$

where P is percentage of entrants to licensees.
A is a constant (about 2,850).
L is number of licensees.
b is a power factor (about 0.8).

All this formula or its graph means is that the higher the number of licensees in a State, there is unlikely to be a significant increase possible above a certain figure in the percentage of entrants to licensees. This could result in a large State with say 1,000 licensees never being able to achieve an entrants to licensees percentage above 20% as against a smaller State being able to obtain a figure of 40 to 50% (which incidentally has been achieved). This factor then obviously gives a big boost to the smaller States.

The author has taken the results of the Contest between 1951 to 1964 as the basis for background on the new system. Results before 1951 did not introduce total State points and could not therefore been taken as representative of results achieved. Symbols used to explain the system are:—

E is entrants from the State considered.
P is the total score of State concerned.
N is total log entries received.
S is particular State's trophy tally points.

It is considered that the final form of any formula to determine the winner must include E and P arranged in such a way that Divisions obtain E as high as possible, which in turn ensures that P is as high as possible. Entrants should be encouraged to stay in the Contest as long as possible and obtain as many contacts as they can.

Here it is appropriate to introduce another argument. Ideally, every entrant from a State should be able to contact every other entrant in the Contest outside his State on each band operated. I think everyone would agree that if there was only one entrant from each State this should be possible, and in this case, all entrants would finish with the same number of points. (A look at the sliding scale of points will show this to be true.) However, in practice, and with the number of entrants involved, this will never happen, but as a hypothetical case it is valid.

Let us assume therefore that we are discussing one band only—the case is still valid—if every entrant from one State contacts every other entrant in the Contest (based on points given in the sliding scale), a certain total of points will be obtained. This will give, for that State, the total points it should have been possible to score for that band. Now if we take these total points as a percentage of the possible total National points and compare this percentage against the **actual** points scored by that State as a percentage of the **actual** National points scored, will show whether the State has bettered or fallen short of its possible percentage. This will give us a yardstick or "factor of merit" for that State. This will give us a ready check on whether the formula devised is truly representative of what could have been achieved. As an example of how this works, the figures for the 1961 Contest have been taken as a typical case.

	Possible %	Actual %	Factor of Merit	Position
VK2	25.58	27.36	+1.78	3
VK3	16.72	19.40	+2.68	2
VK4	12.12	10.51	—1.61	4
VK5	16.96	20.05	+3.09	1
VK6	16.51	12.46	—4.05	6
VK7	11.51	9.15	—2.36	5

The actual positions in this Contest were as follows:—

VK2 4th	VK5 2nd
VK3 5th	VK6 1st
VK4 6th	VK7 3rd

which can be seen do not really represent the true effort or attainable result for this Contest.

A further examination of all the figures under consideration shows that statistical interpretation relates P and E by the straight line:—

$$P = 175\ E - 408$$

where 175 is the gradient of the line and the constant —408 is an intercept on the axis of the graph (which can be disregarded as the line virtually passes through the origin). By applying this gradient figure to the formula, we later endeavour to produce evenness of the result of State scores.

Without going into the various reasons, a formula of the following form has been devised out of all the information available from previous Contest results:—

$$S = P + a\ (N - E)$$

where S, P, N and E have previous meaning and a is a constant or factor.

If we apply a correct value to the constant a, the various States' final scores should be reasonably even. The

value chosen for constant a is the gradient 175 previously determined. This is now applied to this formula with a simple divisor for the entire right hand side of the equation to make the results of a reasonable size. The equation is therefore:—

$$S = \frac{P + 175\ (N - E)}{1000}$$

To show that this formula provides a result comparable with the achievable performance of each State, let us take the case in 1961 again. Applying this formula gives the following scores for each State:—

		Position
VK2	84.401 pts.	3
VK3	85.218 „	2
VK4	83.119 „	4
VK5	86.132 „	1
VK6	77.987 „	6
VK7	81.766 „	5

It will be noted that these results exactly conform with the Ideal Result previously shown for 1961. To further indicate the agreement and correlation between the Ideal and New Formula results, these are shown for the years 1959 to 1964. Column headings indicate I for Ideal, N for new formula, and A for result determined by the old formula.

	1959			1960			1961		
State	I	N	A	I	N	A	I	N	A
VK2	3	3	5	4	4	5	3	3	4
VK3	2	2	4	1	1	4	2	2	5
VK4	6	5	6	6	5	6	4	4	6
VK5	1	1	3	2	2	3	1	1	2
VK6	5	6	2	5	6	2	6	6	1
VK7	4	4	1	3	3	1	5	5	3

	1962			1963			1964		
State	I	N	A	I	N	A	I	N	A
VK2	3	3	5	3	3	4	3	4	6
VK3	2	2	6	2	2	6	1	1	5
VK4	4	4	2	4	4	1	5	5	3
VK5	1	1	3	1	1	3	2	2	1
VK6	6	6	1	6	6	2	6	6	2
VK7	5	5	4	5	5	5	4	3	4

If one therefore accepts the proposition of the Ideal case, the new formula closely predicts the Ideal result.

The new formula also leads to the original concepts of the Contest—that is, that it will be equitable to all States, that it will encourage a maximum entry from each State, and does not lend itself to "juggling". If a State attempted to win by restricting its entrants to a few good operators, its State total points P would be low although the factor N — E × 175 might be high, so that one compensates for the other.

It is therefore proposed that the following basic rules apply with the use of the new formula:—

(a) The present sliding scale of points be retained.
(b) Each State contesting the trophy enters a minimum of 20 eligible logs.
(c) The new formula be used for at least three consecutive Contests.
(d) The minimum number of contacts per entrant, namely five, be deleted.
(e) Only recognised Divisions compete for the Trophy.
(f) Stations outside Divisions, e.g. VK1, VK8, VK9, VK0 be excluded from Divisional scores.
(g) Stations outside Divisions be issued with certificates as per winning stations within Divisions, a minimum of six entrants per call sign area being required.
(h) Certificates be awarded to the three highest logs in Open/Phone section and c.w. sections, a maximum of six certificates per area or Division.

If Divisions are prepared to adopt these basic rules and use the new formula for the Divisional Trophy winner, I am sure the Contest will promote greater interest which has tended to wane over the last few years. If this new formula does not operate in the way predicted, then it can be changed after a reasonable trial of three years. This may tend to inject a pessimistic note but one can only base the future on past trends and not on fact, otherwise clairvoyance would be a lucrative business. The Executive, in proposing this new means of finding the State winner, hopes the Contest will be rejuvenated and that the larger States may now achieve something tangible for their efforts over the years.

Any comments on the proposed new system should be forwarded to the Federal Communications Manager, Box 2611W, G.P.O., Melbourne, Vic.

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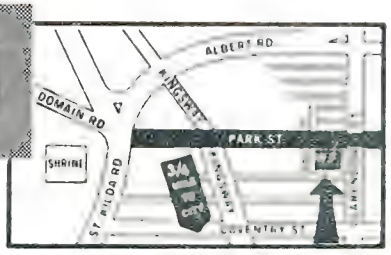

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VK9CJ	133 pts.	VK9DR	46 pts.
9BJ	72 ,,	9WE	8 ,,

ANTARCTICA

Phone—

VK0KH	414 pts.	VK0GW	180 pts.

SECTION E—V.H.F.

New South Wales—

VK2ZCF	90 pts.	VK2AWI	13 pts.
2ZCT	58 ,,	2BWI	13 ,,
2ZSK	52 ,,	2ZPI	12 ,,
2ZPQ	40 ,,	2CF	11 ,,
2ZRU	34 ,,	2CK	10 ,,
2ARF	30 ,,	2APQ	9 ,,
2ZID	24 ,,	2ZSR	8 ,,
2AXJ	23 ,,	2ZJC	8 ,,
2ZTM	21 ,,	2ZAZ	7 ,,
2YJ	18 ,,	2ZSG/T	6 ,,
2ZVC	18 ,,	2ZKT	5 ,,
2WI	16 ,,	2AZY	3 ,,
2ZJH	14 ,,		

Victoria—

VK3ZNJ	73 pts.	VK3ZTN	31 pts.
3ZOQ	38 ,,	3ZMS	14 ,,
3ZCK	33 ,,	3ZOL	11 ,,
3ZLY	25 ,,	3KC	8 ,,

Queensland—

VK4ZLO	16 pts.	VK4ZRW	5 pts.
4ZPL	16 ,,	4ZAL	5 ,,

South Australia—

VK5ZTM	56 pts.	VK5ZEJ	22 pts.
5ZDX	54 ,,	5ZKG	15 ,,
5ZBR	33 ,,	5ZKS	15 ,,
5ZTN	30 ,,	5ZDM	8 ,,
5ZNH	24 ,,	5ZTS	8 ,,
5ZBC	23 ,,	5ZSJ	6 ,,

Check Log: VK5CJ.

Wetern Australia—

VK6HK	21 pts.	VK6WI	10 pts.
6ZEP	15 ,,	6BE	11 ,,

Tasmania—

VK7ZAS	10 pts.	VK7ZYL	9 pts.
7ZJG	10 ,,	7ZDM/M	8 ,,
7ZAV	9 ,,	7ZAQ	7 ,,
7ZMC	9 ,,		

RECEIVING SECTION

New South Wales—

WIA-L2188	806 pts.
L2241	631 ,,
L2022	439 ,,
L2174	295 ,,
L2033	281 ,,
L2259	238 ,,
Ass. W. Schroeder	144 ,,
WIA-L2211	90 ,,
L2039	52 ,,

Victoria—

WIA-L3100/P	934 pts.
Yallourn Tech. Y.R.C.	715 ,,
WIA-L3138	714 ,,
L3211	680 ,,
P. R. Smith	520 ,,
WIA-L3285	518 ,,
L3185	518 ,,
L3190	364 ,,
L3042	355 ,,
L3250	145 ,,
L3055	123 ,,

Queensland—

WIA-L4152	571 pts.
L4144	389 ,,
K. D. Cunningham	368 ,,
WIA-L4018	274 ,,
L4010	199 ,,

South Australia—

WIA-L5065	817 pts.
L5049	617 ,,
D. Clegg	583 ,,
WIA-L5067	579 ,,
J. W. Ross	558 ,,

Tasmania—

G. Johnston	1011 pts.
L. Pretty	638 ,,
WIA-L7031	671 ,,
P. Tompson	420 ,,
WIA-L7038	233 ,,
L7035	176 ,,
L7043	125 ,,
P. Verral	53 ,,

Papua-New Guinea and Territories—

WIA-L9004	193 pts.

V H F

52 - 144 - 420 - 576 - 1296 Mc.

Sub-Editor: LEN POYNTER, VK3ZGP,
14 Esther Court, Fawkner, N.15, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB-EDITOR

Summer is with us once again and band activity is increasing all around Australia and all those interested are preparing for another DX season. With the sunspot minima behind us, conditions should be on the improve, and if the experts can agree the next three seasons should see a swift rise in the sunspot count and a possible increase in DX.

This year will see two of the cities under the cloud of t.v.i. problems. Melbourne has already undergone one season which resulted in a spectacular decrease in activity during t.v. hours. As the respective stations increase their programme hours, then further inroads are being made in our operating times. Brisbane no doubt will experience a crop of missing familiar voices this year.

The problems that exist for one Amateur are not necessarily that of another, which makes it extremely difficult to predict what will happen in any one case. Some have chosen the high end of the band with low power and vertical polarisation and have achieved some success. Others have remained at the low end with normal procedures and the use of traps have overcome their problems.

Many are experiencing difficulty with reception so close to the t.v. channel overloading of receivers and no end of filtering will overcome the problem. All of those plagued with troubles are anxious to conquer them. Large numbers of us are hobbyists and their overall knowledge is limited, whilst their are many who are professional engineers whose knowledge could assist in the investigation of these problems. The design of a no-overload converter and some investigation of t.v. receiver problems could be of great assistance to many who wish to use 6 metres.

NET NEWS

Believe that the 53.035 net is active now in VK7 with some 15-20 stations operative—a recent visitor from VK3 apparently stirred up some activity. VK2 from Wollongong should be represented soon. We also believe that the VK5 beacon on 53 Mc. is temporarily out of business and it will be possible to work into Adelaide, so hope the VK5 stations will keep an ear on this frequency.

Crystal frequencies useable are 5892.5, 6.629, 8.8336, 13.258 Mc. will bring you up—of course a v.f.o. is ideal. Remember the majority of users of this frequency are using ex-commercial fixed frequency gear which requires fairly accurate alignment of frequency for best results.

Large numbers of net frequency users are mobile and to avoid undue congestion lengthy QSOs should be avoided. Mobiles can travel long distances and pass out of range during lengthy QSOs. Keep the overs short and observe a courtesy break before replying to allow others to identify themselves. There is nothing more annoying to run out of road in the middle of a QSO.

The VK6 f.m. net on 6 is quite active according to the W.A. V.h.f. Bulletin. Some 50 odd stations have been active with another 18 on the way. Contacts ranging up to 40 miles have been made whilst stations have been heard up to 120 miles.

The VK3 6 mx f.m. net is slowly making progress and some half dozen stations are active. Recent disposal sales will give a boost to this figure. VK6 52.656 Mc. and VK3 52.525 Mc. are the frequencies.

Two mx f.m. in VK3 has expanded enormously during the past 12 months. Over 150 stations have been logged all over Victoria, spread over the three channels. Peaks of activity are mornings and evenings with both fixed and mobile stations providing plenty of contacts. In the near country and country areas plenty of stations provide DX from time to time. Quite a few are near the 100 stations worked on these channels.

VK2 activity is reaching high levels centred on 146 megs., some 50 odd stations reputed active.

DX OPENINGS

Six mx DX is slowly getting under way. VK4 signals heard in Melbourne on Nov. 1 was 4ZAZ between 8-9 p.m. On Nov. 4, 4ZRG was heard at 5.45 p.m. with some odd openings during the month. Channel 0 from various centres are being heard all over Australia.

Two mx: A good opening between VK3-VK5/VK7 occurred on Sat., Oct. 30. Melbourne stations worked into Adelaide and Renmark during the evening. 5ZKR and 5ZHL at Mt. Gambier were like locals, whilst 5NY (108E. of Adelaide) and 5ZDR in Adelaide, who was in for two hours, worked quite a few Melbourne stations along with 5BC at Renmark, whilst 3AGV at Colac worked 5ZDX. 7ZAA, 7ZAH and 7ZWN were worked and 3ZKU between Rochester and Echuca, north of Melbourne, was available—in all a good evening's work.

Who will gain the first two metre W.A.S. in VK? It's not far off. VK8KK should be active this year to provide another State for the tally. Will VK5-VK6 be worked again? Only time and patience will tell.

OSCAR IV.

By the time you read these notes or soon after, Oscar IV. should be in orbit. Information received to date gives the following details.

The orbit will be sub-synchronous equitorially at a height of approx. 18,200 miles. The orbit time will be 12 days, taking about four days horizon to horizon, with an eight-day gap between appearances.

The receiver frequency is 144.1 plus or minus 5 Kc., and transmitter frequency 431.935 plus or minus 5 Kc.

When launched the satellite might have one or more of the following packages:—

(1) Beacon 431.920 with 20-sec. c.w. carrier plus two HI's, total run 32 secs. each 10 mins.
(2) Multiband beacons on 144.05, 432.15, and 1296.45 with 1 watt c.w. each, the 144.05 channel could be telemetry.
(3) 144.05 c.w. beacon, 432 beacon, 1296 beacon —all separate transmitters.

It will consist either of a tetrahedran package with 27 inch legs weighing 25 lbs., or a 19 inch cube weighing 35 lbs. In either case with the satellite being stabilised and probably the outer skin will be covered in solar cells having a life of 12 months.

A possible future version will have an input on 144.1 plus or minus 10 Kc. translated to 29.45 plus or minus 125, also 10 mx and 432 beacon. Where will it end? A long wire on 1825 Kc. would go well!

Hope everyone is aware of the early closing date for Jan. Thanks to all those who have contributed during the past year. I would like to ask that I be included on your Divisional or branch newsletter mailing lists for additional information and would welcome reports from s.w.l's and individuals to try and build up the newsiness of this page. Notes from areas of v.h.f. activity out of the capital cities will help bridge the gap. Will you help?

All the very best for the coming festive season. Hope you all join in the Ross Hull Contest—and forward a log to the Committee to help swell the numbers. 73, 3ZGP.

NEW SOUTH WALES

Interest is still increasing in the DX field week-end over the New Year. Word was received last month that the VK4 Moonbounce team and ZL2TCW would be in it. The object is to select your favourite high spot, and some time between 5 p.m. (E.S.T.) on Saturday until 9 a.m. (E.S.T.) Monday to try to work v.h.f. DX on the bands of 2 metres and above.

In the next issue I hope to have a complete list of known stations taking part, but at the moment there should be at least 30 field sites. Would all stations who are taking part—including those outside VK2—please advise VK2ZTM, Box 342, P.O. Crows Nest, so that the final list may be compiled. 73, 2ZTM.

QUEENSLAND

The 6 mx band has been open at least four times during October. In the first week of Oct. VK5s were worked by mobile VK4 stations who were on the Queensland Gold Coast at that time. On Oct. 31 both Channel 0 Melbourne and Channel 0 Wagga were heard in Brisbane. However, no Amateur stations were received.

Six metres in Brisbane is particularly active on mornings during the week. Regulars include 4ZRM, 4ZCV, 4ZLO, 4ZFF, 4ZGN. Sunday morning is the only other time that 6 mx comes alive. On this day one is liable to hear 4ZAA, 4ZAL, 4ZRH, 4ZBT, 4ZEP, 4ZDF. Some stations are operating successfully during t.v. hours. Those that have been heard are 4ZDJ, 4WM and 4ZLO.

Two metres remains an active band in Brisbane. 4ZJB has established himself at a new QTH and has earned himself the title of "Voice from the Mountains". 2 mx DX hunters should keep an eye out for 4ZJB this summer. Ross 4ZAT has been active again. John 4ZWB has made a first class job of his new final. Everything has been silver plated, so the rumour goes. Graham 4ZZG has packed his gear and has gone to Longreach. Bill 4ZBO is still flying the flag on 2. Bill is a regular with a first class signal from his 6/40.

The Jamboree-on-the-Air held during October was particularly successful on the v.h.f. bands. Many stations took part and the photographs of 4ZDF which appeared in the local paper caused some favourable comments. His v.h.f. station was situated in the window of the Scout Shop in the centre of the city of Brisbane. 73, 4ZPL.

SOUTH AUSTRALIA

Activity within VK5 during the past month has been very spasmodic, despite stimulating injections provided by Sporadic E DX openings. Openings to VK4 during October have been regular, however activity from VK4 appears to be reduced to a finite quantity as no more than two call signs have been heard at the same time. The advantageous "benefits" of beacon tx's has shown up during this month. On the 6th and 22nd Oct. the VK6 beacon on 52.006 was audible in VK5, but no VK6 signals were heard.

Unfortunately the VK5 beacons are not as yet operational, due to technical correspondence with the Department in Melbourne. It is anticipated, however, that the beacons may again be in action in time for the DX season. Channel 0 reception from Brisbane and Melbourne appears to be the accepted thing, but Amateur signals very rarely follow.

Interest is being shown in Oscar IV. by a few members of the v.h.f. fraternity here in VK5 and 432 megacycle converters, both valve and transistor, are under construction. If nothing else is achieved by Oscar IV., it would appear that a boost for 432 meg. operation within VK5 will certainly eventuate. Unfortunately contacts made through Oscar IV. will have no record bearing status or count for points in the Ross Hull Contest, but nevertheless, should provide an interesting exercise in v.h.f. communication. 73, 5ZHJ.

WESTERN AUSTRALIA

Activity in W.A. is lacking on a.m. due to many old timers being posted to country centres. Many stations are now on f.m. 52.656 and some full calls are coming into the net. One call is on 2 mx f.m. too. The Bickley net shifted to 53.44, but went back to 52.6 due to QRM from the t.v. tx. They are interested in some 8765 Kc. FT243 unmounted crystals obtainable from the W.I.A. for 4/-.

The last fox hunt on Oct. 23 was run by 6ZAG, assisted by Peter Taylor. Ken 6ZDT and Doug 6ZDW found me in 20 minutes, followed closely by 6ZDB in his Cortina. Chas. 6LK was 200 yds. away when he turned around and headed round the other side of Perry Lakes. Somebody provided a lit hurricane lamp on the roof of the fox, but it didn't help much, even with "talking in" on the f.m. net.

The meeting on Oct. 25 was well attended. The beacon was criticised for lack of operation due to keyer breakdown, faulty oscillator, lack of drive to the final and t.v.i. on 9 with both beacons running. Alternate running was discussed but nothing will eventuate unless someone does some work. The Christmas Party was discussed and Doug Wauchope said his place would be available. Note the address, 19 Hardy Road, Hollywood, and the date—Dec. 18. Some lady volunteers required please. A co-ordinator for the John Moyle Memorial Field Day in February is required too. Fin-

(Continued on Page 23)

ERRATUM—V.H.F. CONTEST RULES

In the Rules of the Ross Hull Memorial V.h.f. Contest, published in Oct. "A.R.," page 10, an error appears in the scoring table. Under the sub-headings of "Higher—Up to 10 Miles," a figure 2 should have been shown instead of blank. Operators are asked to amend their copy accordingly.

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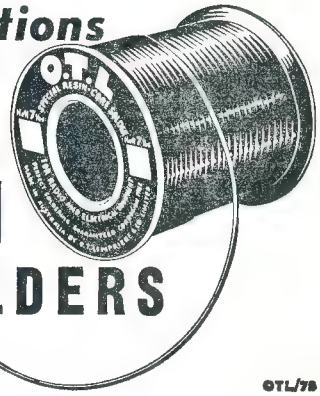

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Sub-Editor: ALAN SHAWSMITH, VK4SS,
35 Whynot Street, West End, Brisbane, Qld.
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB-EDITOR

DX is available on all bands. 28 Mc. is mostly dead and chancy, but does open to the U.S.A. around 2230z at this QTH, when QSOs are easy. 21 Mc. is open daily to all over. Plenty of Js and Ws. Short weak break to S.A. around 0330z and Europeans an hour or two later. 14 Mc. is good for W.A.C. any day. 7 Mc. DX under several layers of commercial QRM, and 3.5 Mc. also loaded with the same interference to the odd DX sig.

NOTES AND NEWS

Agalaga Is.: VQ9HB plans activity from this rare spot during December. QSL: G8KS. Mode s.s.b./c.w. Look for the pile-up.

Venezuela Radio Club: YV9AA and YV3AJ hope to put in an all-band effort. 160-10 mx. Late Nov. and early Dec.

Kwajalein Is.: Leo W1MV, of KP6 expedition past, will open up from KX6 during Nov. into December. All bands and modes.

Jan Mayen: LA5CI/P on 1425 kc. QSL via LA1NG.

Asiatic Russia: UA0KYA operating in Zone 23. Daily on 20 c.w. from 0000z.

Azores: CT2AH will be back on the air again early December. S.s.b. mode.

Marion Is.: ZS2MI still QRV 14250 at 2000z. QSL via ZS1CZ.

Malta: 9N1AB is in the thick of it on 14035 kc. at 2115z. QSL R.S.G.B.

Tchad Republic: TT8AB is reported QRV 21210 kc. at 2000z.

Georgia: UF6UB 14237 kc. Try listening 1930z.

Afghanistan: Charlie YA3TNC is now on 15 as well as 20 mx. Try 21410 at 1430z.

Crozet: FB8WW also taken to using 21 Mc. as well as 7 and 14. 21051 at 1400z.

Spanish Samara: EA9AZ worked on 21280 at 1800z.

Senegal: 6W8DQ. Diop., 14230 at 0200z.

Surinam: PZ1BK. 2130 at 1600z or later. Also PZ1BW 14258 at 2300z.

Republic of Congo: Stan TN8AF, 21068 at 1830 or later.

Liechenstein: MB0ABS and MO0ABE, both on 14114 at 1100z.

French Somaliland: FL8RA, 21065 at 1730z, and FL8MC anywhere in the c.w. 14 Mc. band after 1200z.

Alando Is.: OH0NF, 14235 and about 14025 kc. after 1200z. QSL Box 1, Mariehamm, Finland.

Sakhalin: UW0ER is active s.s.b. on 14 Mc., and 7 Mc.

Grand Turk Is.: VP5AR will be active from here for about 18 months. Also VP5CS. QSLs to W2PVZ.

4W1G and 4W1I: QSLs from both are being handled by Harry Charvat, K9BPO, 207 Mandel Lane, Prospect Heights, Illinois, who has the logs and is having cards printed. He requests s.a.s. and g.m.t. He will probably be handling QSLs for other 4W1 stations as they are activated.

Cocos Is.: VK9JO active on 14 Mc. c.w. 1000z.

Virgin Is.: The perpetual KV4CI can be worked around 2200z on 14 Mc. c.w., also s.s.b. 14110 kc.

Gloriosa: Said to be commencing in Nov. some time. Duration not known. Call to be FR7ZI/G. Mode s.s.b. and maybe c.w. W6RKP can supply further info.

Bonaire: PJ5BC and PJ5BD will be the call used by K0GZN during December. Mode s.s.b. No other info.

Kuching: Several 9M8s are active as of now, but it seems 9M8TG is a pirate. However, 9M8FS, 9M8GT, 9M8RI are authentic. Mainly 14 Mc. c.w.

South Georgia: VP8HO is due to be active commencing Nov. Duration unknown. Mode 14 Mc. s.s.b.

Port. Guinea: Octavio CR3AD on 14067 c.w. at 2245z says QSL to Box 205, Bissau, Port. Guinea.

Sanmarino: M1B, Marion, worked at 1400z on 14247. QTH in Call Book.

Montserrat: VP2ML, Bruce (VP2AL) active on 20 s.s.b. Box 340, Antingua, W.I.

Nepal: 9N1MM, Father Moran, back on again. 14123 kc. at 1330z, listening 14275. QSL to W3KVQ/2, Edward Blaszcyk, 2308 Branch Pike, Cinnaminson, N.J., 08077.

Laos: XW8AZ on 14118 at 1300z.

Mali: Jose CR7GF (CR3GF) would like to go to TZ land, and is going to Lisbon to try to arrange permission.

Malagasy Rep.: 5R8CB, Jaques, on 21254 at 1800z.

Eastern Carolines: KC6FM is active from here s.s.b. 14230 kc. around 0630z. QSL to W2CTN.

Bacanof Island: Alexander Arch, KL7BJC, is active on s.s.b. 14245 kc. around 1645z. QSL to P.O. Box 44, Bacanof Is., Sitka, Alaska.

ZD8AR is a club station and they are active Friday and Saturdays s.s.b. 14250 kc., 1800-2400z, then QSY to 7090 kc. or 3785 kc. s.s.b. With a vee beam for 7 Mc. ZD8HL is also active all bands.

Togo: 5VZ8CM is active from Togo. QSL: F. Payet, P.O. Box 123, Lome, Togo. Will be there approximately one year.

Marie Byrd Base, Ant.: KC4USE is active from here. QSL to K1TWK.

Kerguelen Arch.: FB8XX active on 21 Mc. a.m. and c.w.

Cuba: CO2BO/OK3MM, Jan, is active on c.w., freq. 7010, 7013, 7038 kc. Hopes to be on s.s.b. later.

Fr. Somaliland: FL8RA and FL8MC active, but will avoid pile-ups.

ACTIVITIES

Dud VK4MY has been picking off some nice ones on 14 c.w. They are KG6SZ 0600, XE1EK 0225, KB6CY 0640, OA8D/3 0500, UL7KGF 1240, UC2KMZ 1350, UC2AR 1350, UT5FI 0700, HK-3AVK 0600, HM0HQ 0700z, UA0FM 2100, UW1AR 1327, YO4CS 1400, UO5DN 0600, 9M6DH 1430, KC6SZ 0730, YV1AD 0600, UT5GT 1300, ON5ZO 0700, FO8BI 0600, 9M4MX 0000, KC4USX 0500, HK4AOY 0220, 5W1AZ 0200, UT5BX 0630—all G.M.T.

Chas. VK4UC, who is a QRP operator, has really been among them this month on 20 mx c.w.: KG4AA 0530, PE2EVO 1400, VE8NO (Zone 2) 2200, OM0VF 1135, HM0HQ 0930, VQ9J 1200, PL1TH/M 1300, GI3OLJ 0930, F7CY 1400, 1S9-WNV 1040, VS9MP 1100, VS9OSC (Oman) 1200, PA0ROL 1330, FB8WW 0700, VP7NQ 1200, 9M8RI 1200, VK9JO (Cocos) 1000—all G.M.T.

QSL MANAGERS

AC4AX—VU2AX
EL3A—W3CGF
FL8MY—W0MLY
FQ8HQ—K6EC
FR7ZC/T—W4ECI
1U1TA1—W4VPD
KP6AA—K0YKJ
VR2EA—G3JFF
VR1B—VK3IB
VQ1RO—G2RO
VQ2WM—W2CTN
TU8AU—W8HMI
VQ1IT—VQ1GDW
GB3MAA—G3SXK
KC4USV—W2VIM
LI2CL—G3HCL
DJ9LJ/M1—DL1CF
M1QJ—ON4QJ
OH0AB—W2GHK
OH0VF—OH5VD
VP1JH—W0NWX

SUMMARY

Piracy could be likened to an endemic affliction of A.R. There's always some going on, and it would be interesting to know just how much.

Reports of illegal intrusion into the VK1 ranks comes from Steve VK1VK in A.C.T. I quote: ". . . with only four stations on 14 Mc. s.s.b., we received at a recent meeting of the Canberra Amateur Radio Society, cards for another 23 unknown stations. The only VK1 stations active on 14 Mc. s.s.b. are VK1AU, VK1JG, VK1VK, VK1VP and now our newest arrival VK4YG/1. It is suspected that the offenders are from VK2 country areas."

Have you ever listened to a high-powered DX man bull-doze one of his lesser compatriots out of a rare QSO? This is another practice far too common, and for the sake of Amateur Radio's ethics, it needs periodic airing. It is saddening to hear this miserable feat being accomplished, because each time a little of the best of A.R's spirit is killed. These reprehensible performances seldom pass unnoticed—someone is always listening. The words of Robbie Burns are brought to mind: "Oh that God the gift wud gie us, to hear ourselves as ithers hears us." Those who should know better, don't seem to understand the difference between competition in the spirit—and dog eat dog.

My thanks again to the column's several contributors: L.I.D.X.A., Fla., DX'er, G3DHA, R.S.G.B., Jim G3UGT, Dot K2MGE, Steve VK1VK, Ken VK3TL, Dud VK4MY, Chas VK-4UC and S.w.l. C. Thorpe.

Please chaps, more info on Oceania DX activity. 73, Al VK4SS.

— . . . —

V.H.F. NOTES

(Continued from Page 21)

ally, I'd like to wish you all good luck with Oscar IV. and a Merry Xmas to everybody. 73, 6ZAG.

TASMANIA

Most local activity is still concentrated on the net frequency with about 25 stations in Hobart and eight mobiles in Launceston. Although the crystals supplied to us produce a frequency of 53.035 Mc., it appears to be close enough to the generally accepted frequency to be useful.

A lone, unidentified DX signal around 52.8 Mc. broke the monotony on Oct. 15.

Oct. 23 heralded the start of the 2 mx DX season for the northerners when 7DK contacted 3ZDM. An early return to summer weather has brought with it, during the latter part of October, particularly good signals from Channel 0 and 2 to the northern coastline. On Oct. 24, 3AKN and 5ZHL(?), operating on a flight between Warrnambool and Melbourne, were heard 5/6 in Burnie. A power failure prevented Winston 7ZWN from participating; when power returned the opposition from Melbourne stations was too overpowering. The usual beacon failed on 26th Oct. when an opening between 7ZWN and Melbourne, 3ZOW and others, was not accompanied by VK3 t.v.

Now active on 2 mx is 7BR, Evandale, 12 miles south of Launceston, a useful liaison as he could contact both Hobart and Launceston. Kevin 7ZAH is now employed at Kelso, 40 miles north of Launceston and can contact Burnie easily.

It is hoped there will be some VK7 portable activity during VK2's January effort. To my knowledge VK2 has never been contacted from VK7 on 2 mx although VK3, 4 and 5 have. The early morning hours should be the most fruitful.

Regular signals now include 6 and 2 mx re-broadcasts of 7WI at 1000 hours in both Hobart and Launceston. A slow Morse transmission on 52.2 on Sunday, Tuesday and Thursday is hoped to draw many listeners.

A final word to the hordes of motorists visiting the "Holiday Isle" in December or January—come equipped for 53.032 Mc. a.m. 73, 7ZAO.

V.H.F. CONTEST OF THE YEAR

Remember the V.h.f. Contest of the year—the Ross A. Hull Memorial Contest. It commences on the 11th December at 1401 G.M.T. (i.e. 12th Dec. at 0001 E.A.S.T.), and finishes on the 16th January, 1966, at 1359 G.M.T. (i.e. 2359 E.A.S.T.).

There are some new rules this time, so be in it! Full details from October "A.R.", p.10.

CONTEST CALENDAR

12th December:—
N.Z.A.R.T. V.h.f. Field Day. (Refer "A.R." for Oct., p.19.)

12th December to 16th January:—
Ross A. Hull Memorial Trophy V.h.f. Contest. (Refer Oct. "A.R." p.10.)

12th/13th February:—
John Moyle Memorial National Field Day Contest. (Rules this issue.)

19th/20th February:—
First R.S.G.B. 1.8 Mc. Contest.

19th/20th March:—
B.E.R.U. (Rules p.609, Sept. "R.S.G.B. Bulletin".)

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Deadline for overseas entrants is 15th January, 1966.

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ANTENNA ROTATORS: C-D model, Ham-M, £85. Soon expected Alliance U-98 Rotators, see recent "QST" advertisements, with extra bearing bracket, £27/10/0.

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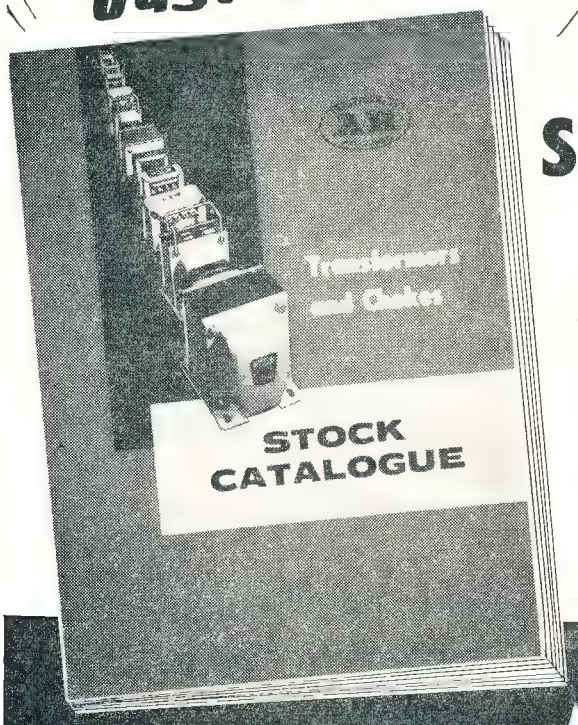

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S W L

Sub-editor: D. Grantley, L2022.
Alexander Ave., Hazelbrook, N.S.W.

Whilst preparing my entry in the recently held VK/ZL Contest, it occurred to me that the average listener has little incentive to win the receiving section of this event. Under the present rules the receiving section is "open," meaning that the totals from both week-ends when combined, give the listener his final score. Many of our s.w.l's are students and young ones at that, and these lads have little or no chance of winning their State certificate, let alone be top scorer when they are forced to compete against men who are experienced c.w. operators and to whom the phone section is only a pipe opener.

The obvious answer would be to divide the receiving section into two parts—phone and open, and by doing this I feel the Contest committee would be rewarded by having increased entries from the junior listeners and phone men.

BAND CONDITIONS

Reports from around the continent show an improvement on all bands. In VK2, L2287, L2001 and L2022 supply the reports. Nothing on 160 or 80, but 40 mx is open to Europe from mid-afternoon and continuing to the daylight hours. 20 mx seems to be open everywhere, Ray L2287 has had openings to TY2, YU3, UL7, F9, UQ2 and CR8. Chas L2001 has been listening in the evenings when excellent loggings have been made from the Pacific. L2022 has loggings to all continents on 20 mx at any time other than mid-morning, at which time 15 mx has been opening to JA and Pacific. This band is usually open to Europe in the evenings, with F3, UA1 and G3 being heard by L2287 and other Europeans by L2022. On several occasions Ws have been heard working ZL on 10 mx.

In VK3 we follow the same pattern with reports from L3042, L3229 and L3211. On 160 Eric has logged VK3 only, but JA, KL7, VE1 and VR1 have been heard on 80 mx. Up to 40 mx, Bob L3229 heard JA, OX, CE, KH6, DU, UA1, KX6, YV, GW, DJ, G and KW6, whilst Eric hooked CM2, VK0, VP4 and ZC4 amongst others. Only other band report from VK3 is for 20, with Bob hearing 96 countries including 1S9, CX, CN8, EA8, MP4T, FR7, CT1, PJ2M, TF, OH0, XZ2, 3A2, LU, PY and ZB2, to which Eric adds K9LMU/HS, HK4, LA5, KC6, OA8D/3, KX6, VK9, 1S9 and 5W1. Warwick L3211 listened to 20 mx between 1100z and 1330z to hear SP, F, EA, 1S9, 5Z4, TI, UA, YO, DL, SM, 4X4, 9M6, DU7 and LA4.

No news from VK4, so over to VK5 represented by Alan L5065 and Tony L5073, both in the throes of exams., the latter just out of hospital. Alan reports good s.s.b. sigs on 7 Mc. from KX6, KS6, W, JA, etc., also on 14 Mc. s.s.b.: CT1, VS6, OD5, HK, HP, ZB2, UO5, KG6, 5X5, 5V8, 9G1, ZS6 and HL9 were just a few. 21 Mc. has been open to JA, KX6, W, and KW6, whilst a W was heard on 28 Mc.

News of openings to JA on 10 mx in VK6 come from Allan L6029 and Bryan L6028, and together with Geoff L6030 they logged 9M4, CR7, KR6, OK1, CR8, EL2, OH0, OA4, KZ4, KX6, UB5, KG6, SM, OD5, UO1, PY4, SV0, CE7 and many others on 20 mx.

Finally, the best 15 mx conditions to date come from Greg Johnston in VK7, where he logged all JA call areas in 90 mins. on 15 mx between 5 and 8 p.m. local time on 6/10. At this time a few Europeans, such as YU6CB were heard. Between 10.30 a.m. and 1 p.m. E.S.T. 15 mx has been wide open to the Pacific and JA. It would seem that conditions on 20 mx in VK7 are excellent up to 2000 local time.

That winds up band reports for the month, but to sum up there seems to be a general lift on all bands, and we can look for some good DX over the holiday period.

PERSONAL NOTES

Eric Trebilcock back at work after a month's lay off with a damaged ankle. Tony Wege back to the studies after a period in hospital. Mrs. Aberneathy has returned from hospital and is 100 per cent. again. A whisper that Greg Johnston is off to VK0. L2022 back from holidays.

DX NEWS

LA8FG/P is on Jan Mayer. ZA1RR and ZA3BA are proven pirates. VP7DL is ex-MP4TAO and will be at present QTH for two years at least. KC6AA is in West Carolines. KC6FM in the East Carolines. The following logs are not available for s.w.l. reports: VQ-8BFC, DU1GFM, TC3ZA, GC8KS, DU3DM, DU5DM, DU0DM and VQ8BFA. PY1NEW welcomes s.w.l. reports, try him via I.S.W.L. VQ9J heard here on 20 c.w., says QSL via K4IXC. JA1SSS is a club station. VP5GC heard in VK2 recently is Frank Stallend, Bodden Town, Grand Caymen Is., B.W.I.

Further from HCJB "The Voice of the Andes," to the effect that HC1s OW, JJ, MX, HG, CM, GE and WR are on the staff there, and usually work on 15 and 20. Not an easy country for Amateur confirmation, but these chaps will be OK via HCJB, Box 691, Quito. This station's DX news session "DX Party Line" heard here recently on Wednesday, 7.30 p.m. E.A.S.T. is valuable for DX news. Station is now changing its QSL card monthly.

INTERNATIONAL DX LADDER

Further to our recent discussions on s.w.l's who have reached the 300 confirmed, G. Watts is the I.S.W.L. member who scored 312 by 1962. Eric L3042 tells me that the A.R.R.L. and W.I.A. lists differ slightly. I do not have exact figures here, but in mid 1960 the A.R.R.L. listed 304 countries whilst in Jan. 1965 the W.I.A. shows over 340 and the I.S.W.L. 317 if my count is correct.

When you next write in chaps, would you please tell me which list you are working from. Being a W.I.A. group, our ladder should follow the local list. However we do note that Eric, who at present is on 294/290, uses the A.R.R.L. list. Just as well, or we wouldn't catch him.

AWARDS

It is fitting that our No. 1 S.w.l., Eric L3042, has been issued with Certificate No. 1 for D.X.C.C. When submitting your claims for D.X.C.C. make certain all rules are complied with, particularly 3 (5) which states that all loggings must be made in the same call area. 4 (2) which refers to altered cards, and 4 (3) make sure the card contains call, time, band, mode, date and location.

A new award is available to S.w.l's. It is called the "San Francisco Award—S.w.l. Class." Confirmation is required from 25 San Francisco stations, one of whom must be a member of the San Francisco Radio Club. QSLs from club members, regardless of QTH will count. All cards must be dated Jan. 1, 1961, or later. Check list only, showing call, date, band, mode, QTH and signed by two W.I.A. officers or radio club offices plus 50c. or 5 I.R.C. to Ray Eichman, 2223, 43rd Ave., San Francisco, Calif., U.S.A. (From "Monitor.")

DX LADDER

The editor has suggested I delete this feature to every second month, so the next will appear in January. Meanwhile, there are several changes, with Roy Kearney, of VK2, reaching the 100 confirmed mark.

QSLs RECEIVED

Those received by members over the past month include: L3042 DU7SV (3.5), UD6BZ, UG6DL, UM8AP, UP2KNP, VK3NZ (1.8), W5EJT (3.5), W9WJB (3.5), 9M4MT and WB6BFE/MM. Alan L5065: KH6EZT, 7Q7PBD, VK9DR, I1RB, YV9AA. Chas, L2001: LA5HE. Ray L2287: UB5, UH8, UT5, 4X4, EI6 and VR1.

That winds it up for this month chaps, remember there will be no notes in the February issue. 73, Don L2022.

☆

Publications Committee Reports That . . .

From the 12th October to the last mail on 8th November correspondence was received from VKs 3IE, 4SS, 6XY, 2KD, 3IB, and Mrs. E. Stevenson, Rev. Bro. Ellis, Greg Johnston and G. Bonadio. Three technical articles were also received.

All correspondents are reminded that their notes must be in the hands of the printer by 8th of each month, hence should be received at "A.R." by the 5th. This date will be adhered to.

January "A.R." will be issued late in December 1965, and the February issue will be distributed about mid February, hence for this issue only there will not be any Divisional notes.

The "Call Book" will not be available this year, due to delays outside of our control. It will be distributed early in February 1966. Many Amateurs have not notified the P.M.G., as required by law, of their change of address, and these incorrect addresses have caused much delay in the forthcoming edition. New arrangements have been concluded with the P.M.G. regarding future editions of the "Call Book" which will enable this Committee to publish it with the minimum of delay.

The new cover design for the 1966 edition of "A.R." has been agreed upon and will be a green colour.

Your Committee wishes all readers Compliments of the Season and thanks all contributors for their efforts during the year.

This year has enabled your Committee to adopt the better quality paper for "A.R." and increase the number and size of drawings in the magazine, all of which we trust has improved it.

Merry Christmas everyone, and a safe holiday.

☆

YOUTH RADIO CLUBS

Christmas greetings to every one of my four readers! By the time you read this, most Y.R.C. will have tapered off their activities during the important end-of-the-year examinations, and schools will soon be into the summer break. There are important Y.R.S. matters at this time of the year—especially Vocational Guidance matters. Many members will obviously be looking for a job which pays them for doing the work they enjoy as a hobby. More and more employees are showing their preference for our members because the boy with Y.R.S. experience has already acquired considerable skill and has a settled idea of vocation. It is still desirable for Club Leaders to give some advice on how to apply for jobs and particularly on how to create a good impression at interviews by being well dressed, well groomed, alert, well spoken, and courteous.

Y.R.S. Certificates are becoming known, and in addition it would be a very good thing to take some well constructed project. Another end-of-the-year matter which is sometimes a worry is the transfer of teachers, sometimes resulting in the disturbance of a well-settled Y.R.C. This year, with the establishment of a radio club at Sydney Teachers' College, VK2 may not have any worries in 1966. Can other States ensure their future in similar fashion? Here's hoping!

Last items from VK3 show continuing healthy signs. One of the healthiest and most interesting is the amount of technical knowledge absorbed by the boys at Gowrie Park State School. If many 11 and 12-year-olds can demonstrate thorough understanding of work placed in 4th and 5th years of High Schools, can learning be difficult under the right conditions with incentives? Club instructors Bill Allen and Harry Saitch are to be congratulated on their work as they were at a recent Presentation Night at the School attended by our Federal President and Education Department officials.

Faye Stuckey, of St. Anne's Radio Club at Sale, reports that the club have built their own tx and have the call sign VK3ACO.

Latest certificate passes are Greythorn High (8 Elem.), Gowrie Park (5 Elem., 5 Junior), Caulfield Grammar (2 Elem., 2 Junior), Edmund Rice (6 Elem.).

Finally, congratulations to Ken Matchett on his newsletter and other work. Thanks also to Dave Buck for publicity.

Final VK2 items come from that excellent newsletter, seldom less than six pages, produced by Jim Webster at Birrong Boys' High. First Postal Group member to gain the Elementary is Mark Swinton (famous name) of Beecroft Grammar, and another Elementary (Honours) to David Tester, of Kingsgrove Nth. High. At Birrong, N. MacDonald, E. Liepens and R. Girdo gained Elementary. The club also reports plans to join in W.I.C.E.N.

Susan 2BSB reports on doings at that very active Westlakes Radio Club, which has a range of members but includes a lot of work for Y.R.C., especially on Saturday afternoons, when Keith 2AKX has a construction class and Fred Overviiet does slow Morse. Paul Linsley and Allen Legge recently passed Elementary. Allen had a lot of fun in the R.D. Contest, logging 142 stations. Ten boys from Westlakes made a visit to Sydney recently for two special excursions—one to the A.B.C., and the other to the A.W.V. works. At both places, they were made welcome and had most interesting visits. Incidentally, Susan 2BSB, now at Newcastle University, supervises a Postal Group but Uni. studies cramp her radio-activity—very sensibly she makes studies first priority.

Lastly, best Christmas wishes to all you wonderful types, the club leaders. You may not get all the obvious signs of gratitude because many young people are careless in that regard, but a lot of people will remember you. 73, 1KM.

SIDEBAND

By Phil Williams VK5NN.

During the past months I have described the s.s.b. generator using phasing circuits, for the benefit of those who wish to get on sideband with the best possible signal which can be generated with truly home-made gear, using the sort of components which can be bought over the counter in any city retail radio store.

From the correspondence I have received, it is apparent that many people are interested in doing just this, and the response from the v.h.f. fraternity seems to indicate an upsurge in interest in s.s.b. for the summer DX period which is about to start.

There is one component for which I have had requests and that is the ferrite cup-cores type K3.001.07. Those who have access to supplies of ferrites through Philips or Mullard sources, have no problem, but if you are really stuck I shall be pleased to send on two pairs of cup-cores if a 10/- postal note is enclosed. This will cover cost plus postal charges, and the change will be returned as stamps. This

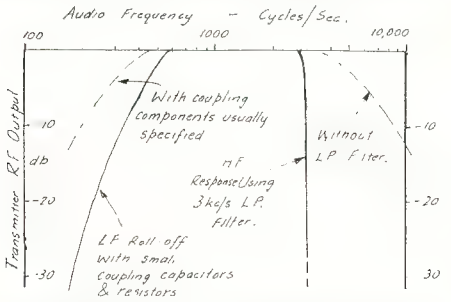

Fig. 1.—Transmitter r.f. output v. audio frequency input—using modified audio circuits in phasing exciter.

can only continue while stocks last—but, please, only if you are "stuck" as I do not wish to get into business, but only to help out.

One question frequently asked has been, "Why is the filter described, better than the simple job using 26 mH. t.v. coils and 0.1 microfarad condensers?" To answer this, I have taken an over-all frequency response curve for the whole transmitter, and this is shown in Fig. 1. The output was taken from the forward direction current on the s.w.r. bridge with the transmitter supplying about 30 watts peak output with 1,000 c.p.s. input. You will notice that the output is more than 20 db. down at 300 cycles/second, rising to full output at 600 cycles. This characteristic is due to the low coupling capacitors and grid resistors in the audio amplifier.

At the high audio frequencsy end the cup-core low-pass filter and grid to ground capacitors it has been possible to get a very sharp cut-off. The frequency response begins to drop at 2.8 kc. and is better than 30 db. down, and still dropping at 3050 c.p.s. The low Q of the t.v. coils of about 26 mH. will not give such a sharp cut-off at the high end of the audio band, so the result is no better than using grid bypass condensers.

The procedures for adjusting phasing exciters have been described in "QST" for Nov. 1956 by Robert Ehrlich, W0JSM, and the article has been reprinted in the A.R.R.L. Handbook entitled "Single Sideband for the Radio Amateur." This article is a classic, which has stood the test of time and I have recommended it to many satisfied customers.

S.S.B. ON V.H.F.

During the coming summer v.h.f. openings don't be surprised to hear the VK5 boys coming up with potent s.s.b. signals on 6 mx and 2 mx.

The purpose of mentioning this is to get the DXers to put a good slow-motion dial and a b.f.o. into their v.h.f. receivers. Perhaps a little better stabilisation of the oscillator would be in order, as well as removal of the a.v.c. from the tunable mixer. A product detector helps on some occasions, but it is amazing how good a diode demodulator can be, provided it has sufficient b.f.o. injection. A trick worth remembering is to couple the b.f.o. into the grid of the last i.f. amplifier via a "gimmick" twisted wire condenser—about ¾ inch of twisted wire is adequate.

Out of a series of eight lectures at v.h.f. group meetings in Adelaide, have come several copies of the phasing exciter ending with a 5B/254M, and all using junk-box parts. Bob 5ZDX and Robb 5RG did much of the spade work on this 6 mx transmitter and other contributors were Les 5AX with a McCoy filter 6 mx tx, George 5GG with an 815 transverter for using the 14 Mc. signal from his Galaxy on six. Last but not least was a very well constructed 2 mx s.s.b. rig built by Comps 5EF. The latter has a QQE06/40 in the final and puts out a potent signal from Gawler S.A.

The V.h.f. Group is to be congratulated on this effort. At the conclusion one of the sponsors was heard to relate that it is no longer necessary to convince people that s.s.b. has something to offer for v.h.f. working. These days people convince themselves when they see that a little box will do more than a hot rack-full of transmitter.

During the Christmas holidays these notes will contain brief descriptions of popular transceivers available to Australian Amateurs. This is in response to many requests, and will as well involve less work than an original dissentation.

In the new year we will get on with technical discussions on the subject of linear amplification of the final signal from the output of the last mixer to the antenna.

HAMILTON (VIC.) S.S.B. CONVENTION

The second Sidebanders' Convention will be held at Hamilton (Victoria) on 29th January, 1966. The object of this gathering is to enable those who use the s.s.b. mode of transmission to get together in person. The previous Convention was held in May 1964, and was a very pleasant turn-out. Those who came to the previous one have received circulars, and are reminded that accommodation is limited in Hamilton, so early booking with Ern 3AEM will be essential.

73, and good sideband ing for Christmas and New Year. Phil, VK5NN.

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Gowrie Park State School Radio Club Presentation Night

The Gowrie Park State School Radio Club is the only club in a primary school in Australia. The members have an average age of 12 years and some of them recently qualified for certificates issued by the W.I.A. Youth Radio Scheme.

Those present for the occasion included: Mr. E. Nelson, Asst. Supervisor, Vic. Radio Branch; Mr. G. Romanes, District School Inspector; Mr. M. Hull, Federal President, W.I.A.; Mr. K. Matchett, Vic. Supervisor, W.I.A. Y.R.S.; Mr. Fishe, School Headmaster; Dr. Plummer, Essendon Grammar School Radio Club; Mr. D. Reed (VK3EI) and Mr. N. Blake (VK3JN) as well as parents and friends of the boys.

Mr. Nelson presented the Junior Certificates, congratulated the boys on their efforts and reminded them that school work must come first and hobbies second. He then recalled some recent changes in Radio Communications, pointing out that future developments will be more startling.

Mr. Romanes, in his address before presenting the Elementary Certificates, said that the Radio Club activity had resulted in an improvement in the spelling, maths. and interest in science of the members' school work.

Mr. Hull spoke briefly on the history of the Y.R.S. before presenting Frank Wrobel (aged 12) with a R.S.G.B. Handbook. Frank is quite a scholar because in addition to being "Dux" of the club in that he gained the highest marks in the Junior Certificate exam., is also top of his class in school.

After the formalities were over, the guests were served with supper and met each other on an informal level.

The club instructors, Bill Allen and Harry Smitch, are to be congratulated for the work and keeness displayed in training these lads to a very high standard. Also congratulations to the successful boys: A. Joyson, H. Kulakowski, R. Kulakowski, W. Stubbs, A. Todorov, who gained Elementary Certificate, and G. Smith, D. Hughes, D. Hardiment, F. Wrobel, T. Todorov, for gaining Junior Certificates.

The W.I.A. Y.R.S. is proud of this club because not only are very young boys making Y.R.S. history, but educational history as well. These keen boys passed an exam. containing some of the work taught in 4th and 5th year at High Schools, proving again that learning need not be difficult if sufficient interest is taken by the student in the subject.

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FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL

FEDERAL EXECUTIVE MEETING, 23/9/65

Prior to the meeting an informal discussion took place with representatives of the Victorian Division re A.R.R.L. publications and their possible effect on advertising in the magazine if handled by the Executive. As no final decision was reached, the matter is to be further examined. The general business of the meeting were matters dealing with a new transit case for the R.D. Trophy, a report on the progress of negotiations with the P.M.G's Department on the revision of the Handbook, and a few outstanding matters remaining to be dealt with from the last Convention.

FEDERAL CONSTITUTION ALTERATION

Federal Executive, on behalf of the Federal Council of the Wireless Institute of Australia, gives notice that having published the following amendment to the Constitution in a regular manner and having received no dissent thereto, now notifies that the said alteration is approved and takes effect as from 1st January, 1966.

The Federal Constitution of the Wireless Institute of Australia 1947 is amended as follows:

(a) By adding the following words at the end of Clause 3 thereof: "and to form a Company to take over the real and personal property belonging to and to give an indemnity against all or any of the liabilities of the Institute and to pay the costs charges and expenses of such formation and to transfer all the assets of the Institute to such Company."

(b) By adding a new Clause 67a after Clause 67 thereof as follows: "67a. Upon the incorporation of the Company referred to in Clause 3 of this Constitution, the Institute shall be dissolved and the assets of the Institute shall be paid and transferred to the said Company in consideration of the said Company indemnifying the Institute, the Council, the Executive and members against all costs expenses and liabilities."

HANDBOOK FOR THE GUIDANCE OF OPERATORS IN AMATEUR SERVICE

During the last few months members of your Federal Executive have been busy on the revision of the Handbook for the Guidance of Operators in the Amateur Service. This is proving to be a formidable task, not only because new ideas are being presented, but because the whole significance of the Wireless Telegraphy Regulations has to be considered in relation to present Departmental policy and the Institute's requirements.

We should like to make it clear that any Regulatory changes will not impose restrictions on the Amateur Service, but will serve to strengthen the foundations of the machinery by which we are regulated. In point of fact it is hoped that certain concessions will be made to present policies and operating procedures; among them being the certain clarification of power measurement for s.s.b., mobile operation, and interference.

It is our and the Department's intention to present the Handbook in a logical progression of events so that it becomes a factual text for the prospective Amateur, and an equally factual reference in time of doubt for the practising Amateur.

1966 FEDERAL CONVENTION

Next year the Convention will be held in Brisbane at Easter, and as usual your Federal Councillor will be presenting to Executive agenda items to be discussed at this Convention. However, he can only do this if members submit to their Division considered ideas on matters affecting the Amateur Service, whether they be administrative or affecting the regulations.

RECIPROCAL LICENSING

We have received details from the Department indicating the procedure to be adopted by aliens wishing to operate an Amateur station in Australia or its Territories. This applies of course to American Amateurs, and those in contact with W stations may wish to pass on this information.

An application shall be made in a form RB80 to the Superintendent, Radio Branch, in the capital city of the State in which the station will be established, or if the operation is intended in a Territory of the Commonwealth, to the Controller, Radio Branch, Melbourne. In each case the formal application should be accompanied by:—

(a) A Photocopy of the applicant's current F.C.C. Amateur licence;

(b) The licensing fee of £1 (American equivalent $2.25);

(c) Information covering the following points:

(i) Date, place of entry and means of arrival in Australia or Territory, name of ship or registration markings of aircraft;

(ii) Whether any war service and if so in what capacity served;

(iii) Occupation, name and address of employer (if any).

One point worthy of mention, however, is that it is not possible for processing of an alien's application to be completed until after his arrival in Australia or in a Territory of the Commonwealth and accordingly there is nothing to be gained by the submission of a formal application prior to his arrival.

RECENT FEDERAL ACTIVITIES

New arrivals to this country are sometimes unaware of the procedure to obtain an Amateur licence, especially if they have held a call or are otherwise suitably qualified in their own country. Several cases have been brought to our attention over the past few months where, because of misunderstandings, a licence has not been granted to qualified Amateurs.

Happily these cases have now been resolved, but if they had been brought to the attention of Executive much earlier, these Amateurs would have had their call signs years ago.

If you know of any instance where Executive may be of assistance, feel free to put the facts before us.

MOONBOUNCE

The Institute has no recent knowledge of the preparations by VK5ZP, VK5ZHJ, VK5NO for their proposed Moonbounce experiments which will take place in the low end of the two-metre band. However, those interested in this phase of Amateur activity will be interested to read that the proposed power to be used will be 1,000 watts. Federal Executive supported the application for the use of this power and formal permission was granted by the Radio Branch last July.

— . . . —

FEDERAL QSL BUREAU

As usual the details of the Rumanian Contest were received two months after the event was over! The Contest was held during the first week-end of August.

Any station who contacted two Israel stations with the suffix /H during the month of September is eligible for an award. Full details from this Bureau.

Advice has been received from George 5W1AZ, Apia, Western Samoa, that the call sign ZM6AC is not known there. George points out that the prefix for W. Samoa has been 5W1 since 1962, so even the pirate is not moving with the times.

Details of two new awards issued by the Malmoe Shortwave Club (Sweden) are to hand. One is for working 30/20/15 Asian capitals and the other for contacting 30/20/15 African capital cities. 30 is class A, 20 class B, and 15 class C. Awards manager is SM7DQK. Further details from this Bureau.

Rex Glew, ZL2ASM, now resident in VK3 for 2-3 years, is nicely settled in the Moorabbin area and has taken out the call VK3ASQ. He will be active when repairs are effected to equipment damaged in transit from ZL.

—Ray Jones, VK3RJ, Manager.

SILENT KEY

It is with deep regret that we record the passing of:

Ex-VK2CY—James Allsop.

VK3XS—E. R. Curtin

NEW SOUTH WALES

Seasons Greetings from the VK2 Division! An invitation is extended to everybody (including the XYL) to attend the December meeting of the Division which will be held on the **third** Friday (18th). It is a social evening and a film programme has been arranged.

Interest is being shown in Wagga re the formation of a club there. For further details contact Sid 2SW. 2ZKN from Orange has been appointed Zone Officer for Area 3. Don't forget the Easter Convention in 1966 which will be held at Urunga and Canberra.

The A.O.C.P. class conducted by the VK2 Division at Wireless Institute Centre will be commenced about mid February. Inquiries should be directed to the Class Supervisor via W.I.C. A relay on the 160 mx band, of the 2WI broadcast, is now being done by 2AWX (the Hunter Branch station). Kevin 2ANY was co-opted to fill a gap on Council.

We were sorry to hear early in October of the passing of James Allsop, ex-VK2CY, ex-VK2ACY. James had been an active member of the pre-war Lakemba Radio Club.

W.I.C.E.N.

Activity and interest in W.I.C.E.N. in VK2 is still growing. When these notes were compiled at the start of November there were well in excess of 50 operators using 146 Mc. f.m. At the last meeting of the W.I.C.E.N. Committee, it was resolved that 146 Mc. f.m. would be the prime mobile frequency in VK2. Six mx frequencies have not yet been decided, but they have to be chosen in relationship to the local t.v. channels and as such they will have to differ from those used in other States.

Around the country many new stations are coming on the air. At Orange in Area 3, there are some seven mobiles and a base and whip-to-whip coverage has extended to past Dubbo in the west and to Mt. Boyce in the Blue Mts. in the east of Orange. Newcastle is to set up 146 Mc. and the base will be run by the Hunter Branch station 2AWX. In Canberra, 1VP has been obtaining good coverage. A test from Mt. Ginini to Bowral provided good signals. 2ZJC and 2ZNS provide coverage in the Penrith/Richmond area, which is one subject to severe flooding. 2AAK at Kulnura, which is the other side of Gosford to Sydney, is providing contacts with Sydney.—2ZTM.

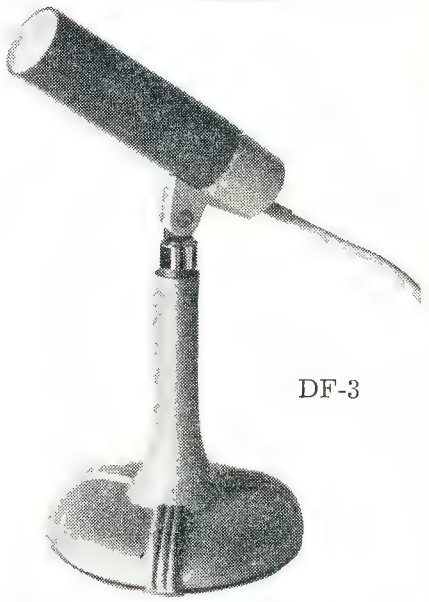
HUNTER BRANCH

What must be judged as the most outstanding lecture on a single component given during the year was presented by Mr. John Lake, of the staff of Mullard (Australia) at the November meeting. John spoke in great detail of the small power diodes commonly in use by Amateurs and gave a most comprehensive report on the operating conditions and capabilities of these devices. His remarks were supported with an abundance of literature and an impressive display of diodes and heat sinks, from the very small to the very large. So great was the interest by the audience of 32 that questions directed to the lecturer continued for 40 minutes. John showed that he was fully equipped to answer all the enquiries and many new and interesting facts were assembled in this way. By courtesy of his Company, Mr. Lake presented two excellent films, one of which, "Thin Film Microcircuits" in colour, was a real assembler's view of the processes involved in this exacting technique. At the conclusion of the meeting, a vote of thanks to the lecturer was moved by Bill 2XT.

At the commencement of the meeting, one member had great difficulty in making himself heard, but following representations made to the President, he was allowed to say his piece, which included among other interesting information that there were now two new calls in the area. Both ex students of the Westlakes Radio Club, the new QRM generators are Fred Overvliet 2ZFO and Henry Schroeder 2ZGK. How these two ever missed out on the Morse is difficult to understand.

Members are also asked by the Bureau of Meteorology to take an interest in the GHOST programme, an observational programme involving radio detection of balloon transmitters on 15.025 Mc. before 7 and after 5 o'clock. Those interested should contact Mr. Henderson at the Bureau, Box 1289K, Melbourne. The attention of s.w.l's in particular is directed to this interesting observational project.

FOSTER DYNAMIC MICROPHONES



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Some members may have gained the impression that 2AWX is conducting a talent quest for announcers for the Monday night broadcasts. This is quite untrue of course, but letters of justified protest should be addressed to the management, if the address can be found. Thanks to Geoff Moore, of the A.B.C., and Tony Chevis, of the N.Z.B.C., "a bit of culture" as one misinformed gent said, is being injected into the weekly sessions. All that is needed now is a bit of electronics, a bit of audio, a bit of suppression of spurious responses and about an extra two hours each day, and we'll have a first class broadcast—you know, like 2WI.

Little is heard on the air these days of the most regular visitor to the concrete jungle, Frank 2APO, but he does get QSL cards, and they are not all from pirates. Mine are—no, sorry 2ZSG isn't a pirate, he's a buccaneer—he used to be an Admiral you know, but they scuppered his barge. Now he just sits and makes mods to mods to Command receivers.

Up where the v.h.f. men do their talking there is great concern since Mac 2ZMO put his 2 mx beam on the Fitzgerald bridge across the Williams River. Some of these chaps will go to any trouble to work the DX! Since a skull was found recently out Toronto way, 2YJ had to be "one up" so he hung a skeleton in a slot above his shack. It has really got results too—much more attention than the skull ever did. Tony 2ZCT, the transistor king, has induced Ian 2ZIF to join him and another 2 mx transistor transceiver has been added to the ranks. But Kevin 2ZKW has built just about everything there is to build so he contents himself by making his shack the most comfortable in VK.

If you receive this before the December meeting, don't forget to look out for 2ZFD and 2ZMO who are coming in fancy dress. But whatever happens, have a happy Christmas and make two resolutions. Don't go to the January meeting and, listen to 2AWX. 73, 2AKX.

CENTRAL COAST AMATEUR RADIO CLUB

The last meeting of the Central Coast Radio Club was held on Oct. 15 with quite a large attendance in spite of several members being away. The evening was devoted to a short business meeting after which a very interesting film on automatic coal mining in N.S.W. was shown. Phil 2TX also gave a lively account of his recent expedition along part of the route of Burke and Wills. His group ventured over the sand hills of the Simpson Desert and on their return trip found their tracks had been obliterated in places. This is when experience and bush-craft are very necessary and as Phil is still hale and hearty, we presume the compass was in good working order. It seems there are still frontiers left in Australia from the sound of a trip like this.

Gary 2UX and Gordon Proctor organised the Boy Scout Jamboree of the Air on Oct. 16 and 17. This year the Girl Guides joined in and from all reports the boys and girls had a wonderful time. Lindsay 2ON gave permission for the use of his shack and gear with Gary in control and Mrs. Douglas supplied large quantities of cool drinks and biscuits. The group used our club call sign of 2AFY and put Gosford on the world map with contacts in Antarctica, Honolulu, New Zealand and Israel. Many intelligent questions and answers were given and received. Les 2AKL, from Ourimbah, entertained several children in his shack with the inevitable drinks and cookies. It is quite an experience to participate in an International event of this kind.

Lindsay 2ON has just returned from his overseas trip—in fact jets in today—and at this stage there is no news. However, he is to give a talk on his trip at the next meeting, so the next issue will have more details.

VK2 DIVISION

Two Metre DX Week-End
On 1st, 2nd and 3rd January, 1966.

Annual Convention
On Australia Day Week-End at VK2WI, Dural.

Zone Two Convention
Dinner and Field Day on Australia Day week-end at Armidale. Inquiries, 2BMK.

Central Coast Field Day
Mid February at Gosford.

We recently talked to Harry 2LX and find that things are proceeding well with the new motel at Urunga and that he expects to be open by Xmas. Good luck Harry!

The Central Coast Radio Club will be having its annual Field Day around the middle of February. Visitors are always welcome and are reminded that the entry fee covers morning and afternoon teas, salad lunch, sightseeing trips, etc., and all the family comes on this day. There will be a launch trip on Brisband Water and a bus trip to cover the beautiful scenic spots of our district.

Frank 2ACQ and his XYL have been away on a lengthy tour which included a visit to the field day at Tumbarumba. I'm sure he met a lot of old friends as well as making many new ones in his capacity as Liaison Officer for country areas.

My OM, Alex 2AAK, and myself have just returned from a three-weeks tour through Victoria. We met a lot of Hams along the way. 73, Mona, 2AXS.

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VICTORIA

WESTERN ZONE

Here is some items of news re our Western Zone Convention which was held at Warracknabeal on 10th Oct. with a very good attendance. Following lunch at the Royal Mail Hotel, our meeting was held. Those elected for office were David 3ADS, President, and once again Bill 3AKW as Secretary; good work Bill. John 3AFU was elected as W.I.C.E.N. co-ordinator for our zone. Those on the Committee are Bill 3AKW, David 3ADS, Neil 3AQD and myself 3AOS.

Michael 3ZEO gave a very interesting talk on W.I.C.E.N. and we thank him very much. Accompanying Michael to Warracknabeal was the Divisional Secretary, Ken 3ACS. 73, Roy 3AOS.

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QUEENSLAND

TOWNSVILLE AND DISTRICT

As the year draws to a close it is time that I wished every one "A Merry Xmas and a Happy New Year" with the earnest prayer that 1966 is much more kinder in the way of DX to every one. That each and every one get all the DX-peditions that seem to be getting around now.

Last night was pleased to hear from the boys on Christmas Is. How happy they are going to be when the AT13 arrives in the near future from the boys of VK4 W.I.A. for their club station. Speaking to many of the boys of the club at the time, it seems that almost everyone will be studying for their ticket. Don 9DR passed on his 73 to all the local boys and hopes they call him some time.

Congratulations go to Evie 4ZEF on passing the Morse and now awaiting the coveted two letter call sign. Charlie 4OM will go mobile to make the first QSO. Better stick to the mobile now Charlie, only chance you will get to be on the air.

A few of the boys are giving the higher bands, 21 and 28 Mc., a hiding when there is the least semblance of it being open.

Congratulations to Ray 4ZRR on getting into double harness. Maybe now will have time to get the Morse under the belt, Ray. Noticed Joe 4JH the other night doing his good deed at the Blind Social entertaining with his musical box. Hard to see him behind the double base—a good job well done. 73, 4RW.

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SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division was held in the clubrooms to a very representative audience of members and visitors, and took the form of a jumble sale (buy and sell to you), and whilst it irks me to say it, so very little can be said about this type of night that has not been said before, that I am going to risk being accused of sparing my words in describing it, except to say that the night was helped along by the joint auctioneers, Brian 5CA and Phil 5NN, and a good time was had by all.

Very little business was transacted, although some time was spent in outlining the details of the proposed bill now before Parliament in connection with the licensing of electricians, much to the consternation and surprise of most of those present, also the resignation from the position of Secretary by John 5JC after long and faithful service, and a couple of other minor items connected with Federal business. Quite a number of old members were present, some of whom have been conspicuous by their absence of late, to say nothing of one or two visitors who were more than welcome. The meeting closed at the witching hour of 11.04 p.m. and it gives me great pleasure to report

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that nothing was seen of the caretaker, nor of his Alsatian elephant—sorry, I mean dog. He looks as big as an elephant some times, especially when he is only one step away from my muscular and athletic figure.

Noticed John 5MX at the meeting, and it certainly is a long time since I reported that fact. He is not very active at the moment, studies must come first, but he manages to sneak in a contact now and again. Why he even contacted me once, when I was sojourning at Oakbank last Easter.

Jim 5FO was another member who has not been seen at a meeting for some time, and he could not get to me quick enough to pass on a message to me from his XYL Rae, which after giving consideration, I am not sure whether it was intended as a compliment or an insult. Jim has been giving the c.w. a bash on 7 Mc. and has at last succeeded in getting his W.A.S. on that band. When I told him that I had heard him at times, he seemed somewhat surprised that I could still copy the code. How insulting can they get?

Al 5EK is our new Secretary, and his appointment has met with general approval. Probably better known for his v.h.f. activities to most, Al has always shown his interest in Divisional matters and will without doubt prove an acquisition to Council, to say nothing of making a good replacement for John 5JC, who incidentally has put in an incalculable amount of work for the VK5 Division and will definitely be missed from the secretarial duties.

Joe 5ZJW made himself known to me at the meeting by telling me that he had installed a new t.v. receiver at the QTH of my daughter and son-in-law, and whilst I can trust my daughter to keep her mouth shut, I am not so sure of Bob, my son-in-law, and judging by the expression on Joe's face as he introduced himself, methinks that a portion of my guilty past may have been aired. Oh well, guilty is as guilty does!

Talking of guilty pasts, I thumbed through the October issue of the magazine to find out if anybody had woken up to my horrible blunder in mixing up, with reckless abandon, a couple of VK2 OM's and XYL's in the Sept. issue. I was almost through the magazine and starting to breathe more easy, when I bumped into the remarks of one Bob 4RW. There are narks in Heaven, so I am told, and this bloke turned out to be a beauty. He exposed my guilty secret in no uncertain manner, so much so that my "friends" decided to "needle" me once again, much to their enjoyment. There is no doubt about these VK4s, they have never let up on me since I insinuated that they could not grow a straight banana.

Ray 5RK and Joe 5JO were having quite a conflab in front of me at the meeting, and in the hope that I might learn some information hot off the press, I leaned forward and tuned in. They were talking about all of the previous "buy-and-sell auctioneers that had passed on—Dougal, Ross and Norm—and Ray, noticing me, said in a tone of voice that implied that I had somewhat let them down, "all except Pansy, and he got out in time." I did not like their tone or looks as they glared at me, so mucha so, that I did not walk in front of them as we left the meeting—after all, it is marvellous just what a slight push in the back can do to one at the top of the stairs. Sorry to disappoint you OMs.

Jack 5LR has finally broken the ties that bind, and has "the thing" working on all bands, much to his satisfaction and to my disgust. Comps 5EF, of course, is tickled pink, another one to put in the little black book. Thank heavens I am too pure to get in that book!

Latest news from Frank 5MZ since his return from his sojourn in the Adelaide Hospital is that he is making good progress toward good health. Carl 5SS, now that Frank is home and about again, can relax a little.

Understand that Geoff 5TY was heard to remark on the air that he was having a go at his "Beetle" to find out just why one of the cylinders had conked out, and the others had decided to act as pallbearers. I gathered from his lack of confidence expressed, that he did not expect to break any records established by Volkswagen mechanics for maintenance, but was at least hopeful that it would at least go again, but he failed to say where it would go!

Uncle Tom 5TL has returned from his sojourn among the "'wise men from the east," although he was somewhat lucky to make it. It appears that he was only a few miles from his QTH, on the way to VK2, when another car tried to bite his car, and after his car had bitten back, both cars went into dock for minor repairs. The only serious damage being to Tom's ego, which was somewhat deflated after going 40 years without such an incident. Whilst on his trip, Tom renewed acquaintance with Frank 2GD, of Deniliquin, formerly of Ouyen (3FC) and places further south.

Mac 5MM is doing his best to make his presence felt on the "square bands" and the extent of his dedication in this respect may be estimated by the fact that he had a large palm tree removed from his QTH to facilitate the antenna position. Such dedication deserves its reward, has it Mac?

The new VK5 proposed legislation by the Government in power concerning electrical contractors, is causing much controversy among those most likely to be affected, and the V.I.P's in the VK5 Divisional set-up have not been letting the matter lay idle. Very little information to hand at the moment of writing, but if the bill be taken on its theoretical merits, no one, outside the favoured few, will even be allowed to replace a three-pin plug on voltages above 40 volts. Letters to the paper, under the signature, and without the signature, of well known Amateurs have appeared as if by magic, to say nothing about personal contacting local M.P's by the "right people" and all in all, it will not be the fault of the VK5 Division if the proposed legislation does not receive plenty of publicity as to its merits and de-merits, before it becomes law or is thrown out by the Parliament.

The Adelaide Airport was the scene of much activity, t.v. cameras, etc., etc., the other day as V.I.P's disembarked from the Interstate jet service, and among the arrivals were none other than Rex 5DO and his smiling and attractive XYL, Doris, who were returning from their extended tour to England, Europe and America, and all ports between. Welcome home Rex—and you, too, Doris!

Listened in the other early evening on 7 Mc. and heard a contact which I usually describe as a typical Radio Amateur contact. Not very often heard on the bands these days of high falutin' technical disussions, and other long-winded descriptions of station gear, but nevertheless doing more to create an image for Amateur Radio in the listener's ear and mind, this type of contact does more for our hobby than all of the publicity in the world. The contact was between a VK2 and a VK3, and unfortunately the VK2 was not audible to me, but if Ike 3OW—and I call him Ike because I missed his name, and Ike seems to fit him like a glove, should be reading this paragraph, then I congratulate him most heartily for reminding me, if only fleetingly, of just what Amateur Radio used to sound like. After listening to such a contact, I am beginning to wonder if in striving to create a 1965 "image" for Amateur Radio, we are only succeeding in destroying all that is so symbolical of our hobby of Amateur Radio, and never forget, despite all that is written these days concerning the modern Radio Amateur, it all started as, and still is, a hobby in the true sense.

Was beginning to wonder what had happened to Les 5PN. I have not heard him for such a long time. Anyway, just when I had decided to institute a search, up he bobs on 7 Mc. in contact with a VK3, and whilst I did not hear him sign, I could never miss that aristocratic intonation. How's that Les?

Another one that has been conspicuous by his absence is Lloyd 5OK, but I found him too. He was testing his mobile outfit on 7 Mc. the other late afternoon and from this I have deduced that he was on his holidays, or possibly having a "sickie". Oh, I just remembered, Past Presidents do not sink that low! at least going on my secluded and cloistered experience.

Noticed Ses 5GP leaving the meeting laden up with bulky parcels. This bloke must have a huge collection of buy-and-sell purchases at his QTH. He has been staggering out of such meeting nights for years, what it is to be a millionaire!

Gilbert 5GX, our busy disposals officer, at the moment of writing, has adjourned to the local hospital for a minor chassis repair. He told me at the meeting that he only expected to be hospitalised for about nine days or so, so as you read this he should be kicking up his heels again. What's that? Gilbert does not kick up his heels. That's what you think, you never know these quiet ones!

Ted 5ZE is the new President of the Elizabeth Amateur Radio Club, with Bill 5VE as the new Secretary, and whilst I am on it, Ken 5ZCH is the new Treasurer with Daryll 5ZLO and Don 5TM completing the committee.

Brian 5ZNK at the moment of writing is holidaying up with the "straight banana mob." Hope they don't find out that he is a VK5, they will probably take to him with a pineapple or something.

By the way, the Elizabeth Club station 5LZ is on the air on 80 mx each Monday evening, so here is a chance for all to contact them.

Just as I was preparing to put these notes to bed, as they say in newspaper circles, I received a long white envelope, bearing the imprint of the Silverton Tramway Co. Ltd., Broken Hill, and very formally addressed to Warwick Parsons, Esquire. Now a long white envelope is always suspicious looking, an official imprint a little awesome, and a formal address usually clinches the whole matter. Sure enough, it worked out that way, it was from Dud 2DQ, the Secretary of the Hamilton Sidebanders' Get-Together for 1966 at Hamilton, VK3, and could only be taken as an invitation to me (may I be excused for my profanity) to attend the gathering. Can you imagine the hide of that joker? Me at a sidebanders' get-together, how insulting can he get? Why, you might just as well ask me to give allegiance to the present VK3 President! Anyway, Dud, insults aside, I thank you for the invitation and the particulars enclosed, but due to my having a little trouble with a couple of hungry looking wolves at my front door, I must continue to slave away at my vocation and thus cannot attend. However, I will do my best to plant a member of my espionage service at the gathering, and I feel positive that he will be only too pleased to write a full account of the doings in the magazine the next time he acts as Pro 5PS, in fact we will have to shoot him to stop him.

Well, here it is, the Festive Season again, and all in the VK5 Division extend the Seasons Greetings to all in the other Divisions. We sincerely hope that the coming year will bring you all that you desire and that 1966 will see still a further step forward for our wonderful hobby, and also for our status in the world of radio and t.v. Just to show how ga-ga I get this time of the year, all the best to those users of "The Thing," and may they all escape being grabbed for the Xmas dinner table. Get it? Quack, quack—Xmas dinner table—quack, quack—never mind, I thought it was funny! 73, 5PS, PanSy to you.

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TASMANIA

Here it is December, and another year almost gone. I wonder how many of us have finished or almost finished those jobs we resolved to get done at the beginning of the year. Personally I think I must have taken on too much, I've only got about half of what I intended finished. Still, I'll get the remainder done soon (before I take on any more).

Looking back, it has not been a bad year, radio wise. The bands are improving(?), propagation wise I mean; QRM wise they are possibly deteriorating with more commercials about on our frequencies. Most of our contests were reasonably well patronised, however, if you didn't get on when you should for these, then make up your mind to help your Division this coming year.

Talking of helping your Division, we will be losing three Councillors next year, so what about giving this matter a bit of thought. The Division cannot carry on without a Council of seven members and three from seven only leaves four. What about you, couldn't you give your services, and help with the responsibility. When I look around at a meeting, almost everybody has a good solid set of shoulders which are quite capable of carrying a little bit of the load.

By the time you read this, our Hamfest will be over for another year, and as I said last month its success or failure was due to two things, the weather (over which we have no control) and you!

The v.h.f. DX season is upon us once again, and with the greatly increased 6 mx activity in this State, we should have a good run this year. The V.h.f. Group discussed the final Ross Hull rules as they appeared in "A.R." a couple of months ago, and all seemed reasonably happy with the arrangement. Time will tell of course and I trust all who work and exchange numbers in the Contest will submit their log and include any pertinent comments you may have on the rules, to help the Committee.

Our general meeting for November was to have been graced with a short lecture by Len 7LE, but due to unforseen circumstances, he couldn't get along, but our ex-W friend, Lee (soon to be a VK7) bridged the gap and filled in with a short and most interesting "off the cuff" lecture on car ignition systems (transistorised, etc.).

I cannot sign off this month without the very pleasant job of wishing each and every member of the Institute, on behalf of the President and Council of the VK7 Division, a very Merry Christmas, a Happy and Prosperous New Year, in fact everything you would wish yourself. 73, Geoff 7ZAS.

NORTH WESTERN ZONE

The October general meeting of this zone took place at our usual headquarters at Ulverstone on Tuesday 5th with another good roll up of 20 members. I was about to say 19, but remembered that 7TT (the Terrible Tiger) stealthily crept in half way through the reading of the minutes. Nice to see you again Terry, and also to Snow 7CH and Sam 7SM.

With regard to W.I.C.E.N. and the proposed 2 mx mobile units, you should have seen members' faces light up with enthusiasm when our

worthy Secretary said he had received a letter from the Southern Zone regarding the delivery of the mobiles. However, the enthusiasm was short lived when members were advised that it might be weeks or months and quite possibly years before the N.W. Zone received their quota of mobile units.

Another item that cropped up was the appointment of a Broadcast Liaison Officer—whose duty it is to call up VK7WI before each Sunday morning broadcast and pass on information from the N.W. Zone regarding forthcoming meeting arrangements, etc. Now as conditions have been poor at times, a strong reliable s.s.b. signal would be the ideal mode of transmission, but unfortunately looking around for the right person poses a problem. George 7XL is a late riser and doesn't crawl out of bed until half way through the broadcast; Sam 7SM is too busy chasing DX; while Ken 7AI is busy milking cows and I am usually tearing up turf at the golf links most Sunday mornings, so the logical choice fell on Max 7MX with his 60w. of ancient modulation helped by two healthy tonsils. Anyway, after a certain undercurrent of laughter had died down regarding the pros and cons of s.s.b./a.m., Max was duly appointed.

To round off the evening Gerald Wade and Winston Nichols gave a combined lecture on the subject of transistors, which was dramatically illustrated by a series of meters showing current and voltage flow through both the emitter and collector circuits, and the actual rise in temperature represented by current flow when heat was applied to the transistor itself. It was certainly very well done, chaps, and we look forward to your next lecture whatever it might be.

To finish off this month's gossip I must tell you about a letter I received in the post the other day. It was post marked "Alberta" and apart from the colourful stamps which took my eye there was also scrawled across the envelope such expressions as "Sunny Alberta," "Peace River District," "Land of the Braic," etc. Do you remember that educated nut from Wynyard who used to sign himself VK7 Beautiful Ladies? Well, you guessed right, yes the letter was from Basil and it appears he receives "A.R." each month and when my zone notes appeared he wrote to me threatening libel if I made any derogatory remarks about him. Anyway, Basil, nice to hear from you and from all accounts it looks like you have almost amassed your fortune and will one day be returning to VK7 land.

Well chaps, all that remains is for me to say a very Merry Xmas to all VK7s and S.w.l's and to all our friends everywhere. 73, 7MS.

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